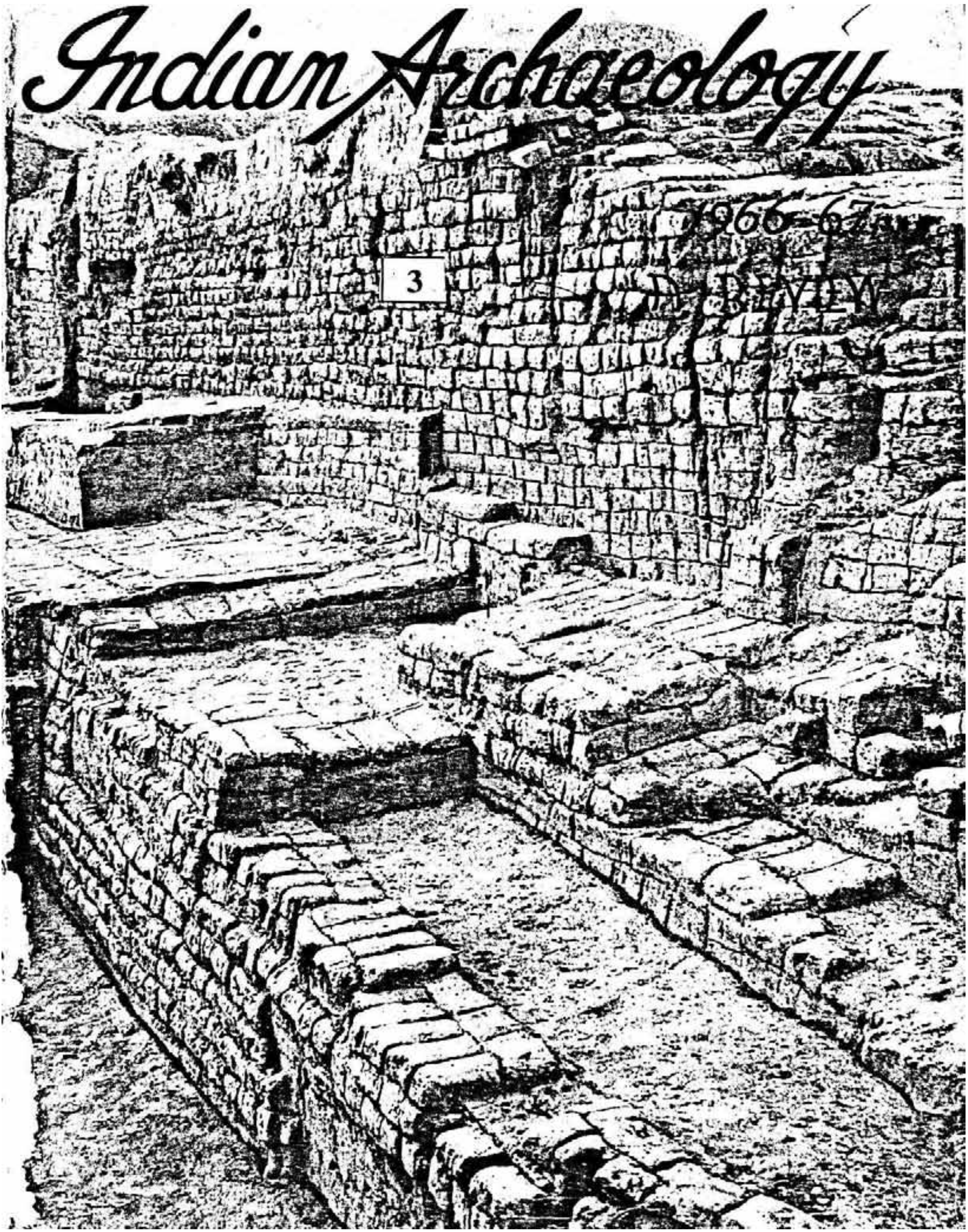
Indian Archaeology

1966-67

A REVIEW



INDIAN ARCHAEOLOGY 1966-67
—A REVIEW

EDITED BY

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Director General
Archaeological Survey of India

ARCHAEOLOGICAL SURVEY OF INDIA
GOVERNMENT OF INDIA
NEW DELHI
1975

Cover:
Excavated mud-brick platform in the 'citadel' area at Kalibangan, a Harappan metropolis in the Saraswati Valley

Price: Rupees Twenty

PRINTED AT NABA MUDRAN PRIVATE LTD., CALCUTTA, 700004

PREFACE

With the publication of this issue of the *Review*, the backlog of arrears, relating to the pre-1968 period, has been cleared. We have now a running series from 1953-54 to 1971-72. Work on the subsequent issues is in different stages of preparation, and would be completed soon. As usual, this issue owes much to the contributions made by the organizations outside the Survey viz. universities, research institutions, including the Tata Institute of Fundamental Research, and the various State Departments- of Archaeology. I am deeply beholden to each one of the contributors. I am also thankful to the staff of the Survey who have helped me in the production of this issue.

M. N. DESHPANDE

New Delhi
1 December 1975

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INDIAN ARCHAEOLOGY 1966-67

—A REVIEW

I. EXPLORATIONS AND EXCAVATIONS

ANDHRA PRADESH

1. EXCAVATION AT POCHAMPAD, DISTRICT ADILABAD.—The Department of Archaeo logy and Museums, Government of Andhra Pradesh, under Shri Abdul Waheed Khan, conducted excavation at Pochampad, during the course of which five megalithic burials were exposed.

One of the burials consisted of a single circle of closely-planted, untrimmed granite boulders, measuring 10*06 m in diameter, with a very heavy scatter of rubble in and around the boulders and extending to the centre.

A 1'5-m deep pit seems to have been cut partly into the natural soil. In the south-western quadrant, just beneath the ancient ground level, a skeleton of a horse, probably interred as a final offering before the end of the ritual, was exposed. It is also probable that the horse was buried along with the master as in the Scythian burials in Central Asia. The grave-pit was found to be roughly oblong on plan, oriented east-west and measured 2-16 m in length and 1-68 m in breadth. The bottom of the pit was levelled up by a 15 cm thick deposit of earth.

Of the grave goods, the distinctive megalithic pottery, viz. the Black-and-red, red and all-black wares, represented by such shapes as dishes, stands, pots and bowls, etc., were seen huddled up along the northern and southern margins of the pit.

Overlying the pottery in the central area were two skeletons, one each of a male and a female, placed in an extended position, oriented from east to west. Most of the bones were found in a disarticulated position. The maxila and the mandible with their teeth intact, were turned partly to right. An ivory comb was seen underneath the skull. The ribs and the vertebrae, the pelvic girdle, right tibia and fibula, carpals and metacarpals were found mixed up. The burials seem to be secondary. Iron implements, such as a sickle, a chisel and a triangular object of an indeterminate use were found in between the tibiae. Sometimes, the animal bones were also interred as primary offerings over the rugged floor before pottery was placed.

2. EXCAVATION AT PALAVOY, DISTRICT ANANTAPUR.—Shri V. R. Reddy of the Deccan College Post-Graduate and Research Institute, Poona, working under the guidance of Prof H. D. Sankalia and Dr Z. D. Ansari, undertook an excavation at Palavoy, some 8 km south-east of Kalyandrug town on the Kalyandrug—Dharmavaram road. The site consists of four ash mounds and a neolithic habitation. Six trenches, two each on Ash Mounds 1 and 2, and two in the habitation area, were taken up for excavation.

On Ash Mound-1, one of the trenches yielded a sequence of fourteen layers belonging to three cultural periods. Of these, the lowest one was found to be pre-neolithic, marked by

the occurrence of patinated trap flakes and microliths. Period II was neolithic in cultural content and was represented by floors with post-holes. An interesting find from the deposits, belonging to this period, consisted of an edge-ground bone axe. Other objects included neolithic stone implements, painted pottery and blotchy grey pottery—all hand-made, besides a large number of curious unbaked clay objects, a large number of fragmentary animal bones, some of which are charred. Period III was post-neolithic and showed the use of iron. Many floors of this Period were exposed, showing house-plans, etc.

The other trench was laid out to find out the extent of the ash mound. The strati-graphical sequence revealed by this trench was found to be similar to that of the earlier trench.

On Ash Mound-2, one trench was laid out on the north-eastern slope of the mound and the other on the western. The former failed to give the sequence met with in the trenches of Mound-I. One of the layers, however, yielded two complete beautifully ground bone axes. The latter trench brought to light two burnings with a single floor in between as against five floors of Ash Mound-1. The neolithic levels of this trench also yielded two complete ground bone axes of unequal size.

At the foot of the hill, a little to the south-east of the Ash Mound-3, there are three habitational areas running roughly parallel to each other. With a view to finding out the relation of the neolithic levels of the ash mounds to these areas, two small trenches were dug up on two terraces designated H-l and H-2 respectively. The trench H-l brought to light four single urn-burials, covered with bowls. The burials were found at a depth of about 10 cm below surface. Besides pottery, both grey and painted, traces of habitation could be obtained in this small trench.

The trench H-2 yielded a few ground stone axes, rubbing stones, sling balls, hammer stones and a lot of pottery.

3. EXPLORATION IN DISTRICT CHITTOOR.—Dr K. D. Banerjee, Shri S. B. Lai and Shri H. N. Singh of the Archaeological Survey of India[1] discovered Early Stone Age site at Sirsanambedu in Taluk Kalahasti.

4. EXPLORATION IN DISTRICTS GUNTUR, KRISHNA AND MEDAK.—The Department of Archaeology and Museums, Government of Andhra Pradesh, explored the following three sites: (i) Mallepadu, in Tenali Taluk of District Guntur; (ii) Mukkolu in Masuli-patnam Taluk of District Krishna; and (iii) Alladurg of District Medak.

At Mallepadu, the occupation strata yielded sherds of the megalithic Black-and-Red, all-black and red wares besides beads of semi-precious stones like jasper, carnelian, etc.

At Mukkolu, a cutting, measuring 17.5 X 3.5 m, was laid out to expose a long enclosure wall running in east-west direction.

At Alladurg, a shrine painted with beautiful frescoes was brought to light. The shrine in question was buried under a huge debris of brickbats, large stone slabs and other similar materials: On clearance it was found that the vestibule of the shrine contained murals.

5. EXPLORATION IN DISTRICT KURNOOL.—In the course of his exploration, Shri B. Rajarao of the South-eastern circle of the Survey discovered an ancient mound, about four hectares in area, situated at a distance of 2 km towards north-east of Koilkuntla.

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[1] This organisation will be referred to in the following pages by the term 'Survey' only.

Sherds of the red and red-slipped wares of the early historical period were collected from this mound.

Temples of Chalukyan style were found at Komarolu and Gopalunipalle of Giddaluru taluk and Kotapadu of Koilkuntla Taluk. Temples of Vijayanagara period were noticed at Perusomula and Koilkuntla. There are beautiful Vijayanagara paintings depicting some important scenes from the *Ramayana* on the ceiling of the *mukha-mandapa* of the Pandurangasvami temple at Koilkuntla. The plaster base of these paintings is peeling off at some places.

6. EXPLORATION IN DISTRICT NELLORE.—Dr K. D. Banerjee, Shri S. B. Lai and Shri H. N. Singh of the Survey discovered Early Stone Age sites at Nayudupet and Dora-varichattram in Sulurpet Taluk, and at Venkatagiri and Lallapeta in Venkatagiri Taluk.

ASSAM

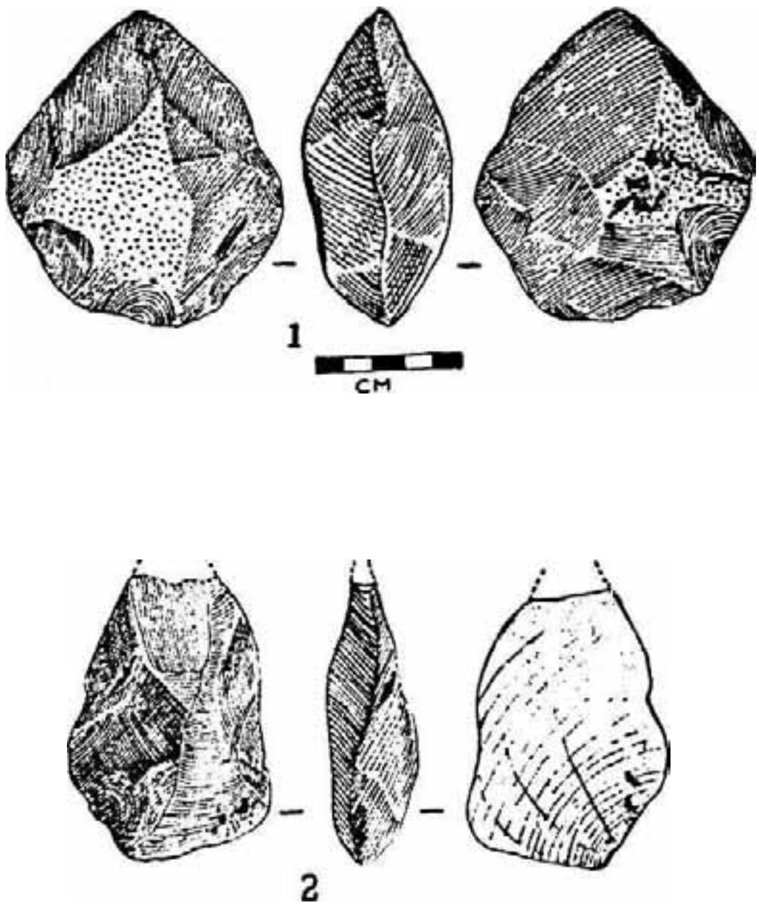
7. EXPLORATION IN DISTRICT GARO HILLS.—In continuation of the last season's work {*Indian Archaeology 1965-66—A Review,*[1] *p.* 6) Prof M. C. Goswami and Dr T.G. Sharma of the Department of Anthropology, University of Gauhati, carried out exploration in the central and northern parts of the Garo Hills. The work was mainly confined to the north-western face of the Tura and the Arbela Ranges, which form the highest ridge, about 2,000 ft (app 610 m) above sea level, of this area. The topography of the region is formed of highly serrated hills with narrow valleys and deep gorges. The basal rocks of this area consist of gneiss and granite which are intruded at places by dykes of doleritic basalt. The last-named rock, a fine-grained material of dark grey colour, forms the chief raw material for making various types of implements found in this area. In the Tura area and further south and west, these basal rocks are overlain by sandstone, limestone and clay, all belonging to the Tertiary series.

The area is very rich in prehistoric finds. Stone tools and pottery were collected from many hill-tops. For instance, a site called Rongru Abri yielded over 300 stone tools and a large number of potsherds on a partial search of the cliff and the slopes. Thorough search was not possible due to thick jungle that still covers the major part of the site.

The sites explored in this season are: (1) Matchakolgiri, about 5 km to the northeast of Tura town on the Tura-Phulbari Road; (ii) Ganolgiri, about 10 km to the north of Tura in the valley of the Rongram river; (iii) Rongram, about 16 km to the north of Tura in the valley of the Rongram river; (iv) Rengchangiri, about 3 km to the east of Rongram on the Rongram-Rongjeng Road; (v) Rongru Abri, about 3 km to the south of Rengchangiri; (vi) Chitra Abri, about 1 km to the south of the above site; and (vii) Rongdu, about 3 km to the south-east of Rongjeng in the north-eastern part of the Garo Hills.

Of these, the last-named site deserves special attention, since for the first time in Assam, stone tools resembling palaeolithic choppers (fig. 1) and scrappers were discovered. The site lies on the southern bank of the Rengshi river where the altitude of the hills rises to a height of about 2,000 ft (app. 610 m). Here, the river cuts a deep gorge. In the river valley, at least three terraces could be noticed, the upper one, which rises to a height of

[1] This publication will be referred to in the following pages by the year only.



CM

Fig. 1

about 60 m above the river-bed, yielded a tool, probably a chopping tool. A flake tool (fig. 1), probably a scraper, was obtained from the lower terrace. The former is made on a lump of sandstone. The tool_heavily patinated and shows considerable degree of rolling. Alternate flakings giving rjse_to a sinuous edge, a character usually associated with a chopping tool are present on the tool. The latter tool is made on a flake of quartzite.

The collection from other sites "consisted of neolithic stone axes and adzes, grinding tonej3 and pottery.

All the artifacts have been found on the surface of those hill-tops which were cleared for shifting cultivation. These were apparently exposed due to erosion of the soil (cultural layer). Some tools were found fully or partly exposed on the top of the ridge, but their greater concentration is noticed at the lower level of the slope and in the bed of the gullies and runnels flowing down the cliff. All the tools, made on doleritic basalt, are heavily weathered giving rise to a reddish brown patina that simulates ferruginous sandstone. Some of the crudely chipped axes, are so much corroded that only a thin section of the original rock is now preserved at the core of the tool.

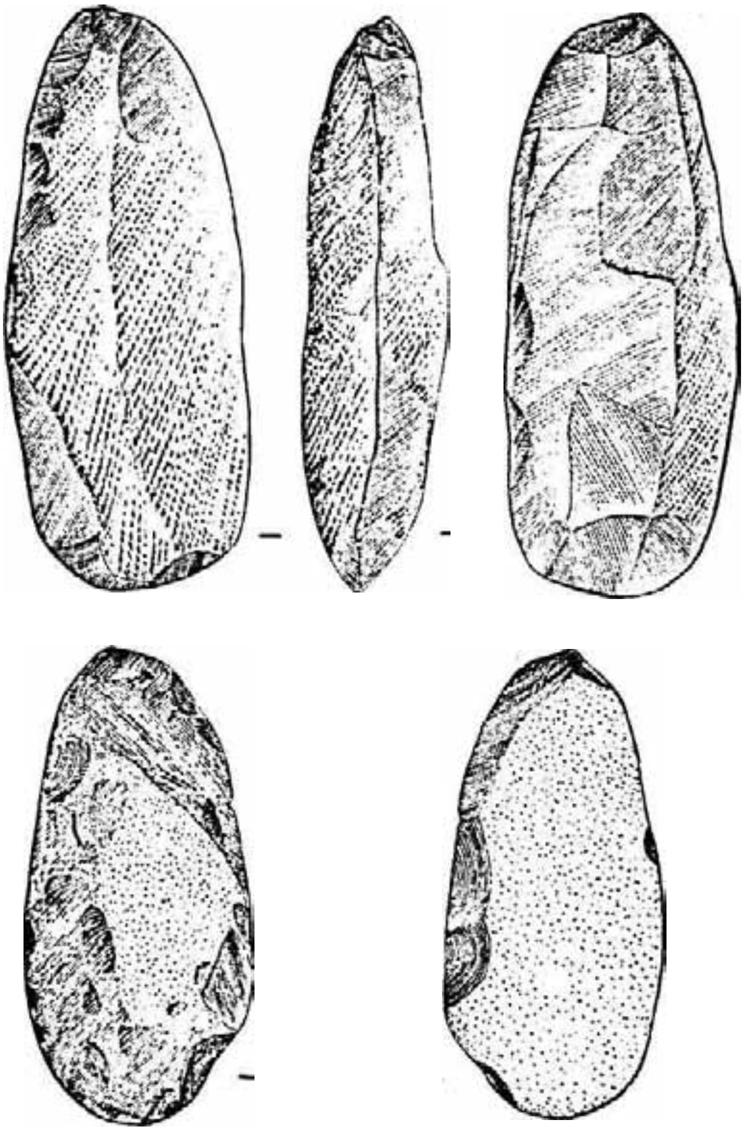


Fig. 2

On typological basis, the stone tools (pl. I) found at these sites include Sumatralith (or Hoabinhian) (fig. 2 and pl. II A), cores, flakes, axes, adzes, hoes, long narrow celt and grinding stones (pi. II B). The pottery finds from the sites consist of only sherds. These are found on the surface of the ground. In some cases, stone axes and potsherds have been found lying side by side. By and large, the pottery is handmade and is predominantly grey_in colour. An impure clay, tempered with quartz grits, seems to have been employed for the manufacture of pottery.

BIHAR

8. EXCAVATION AT ANTICHAK, DISTRICT BHAGALPUR.—The Department of Archaeology and Museums, Government of Bihar, continued *(1965-66,* pp. 6-7), the clearance work at the *stupa-site* in the north-eastern quadrant. During the process, the core of the *stupa,* the wall running along upper *pradakshina-patha* and brick pillars were exposed and various terracotta plaques of Buddha, Buddhist deities, animal figurines and an inscribed terracotta seal were found from the floor of the upper *pradakshina-patha.*

9. EXCAVATION AT ORIUP, DISTRICT BHAGALPUR.—While clearance work of the *stupa-mound* was in progress at Antichak, surface-exploration of the mounds near Oriup village, about 2 km south-west of the Antichak *stupa-site,* had yielded a large number of sherds of the black-and-red ware along with a unique type of elongated lipped bowl bearing white paintings. A few pieces of the Northern Black Polished Ware (hereafter abbreviated as the N.B.P. Ware) of silvery hue were also discovered. With a view to investigating the general stratigraphic sequence, the Department of Ancient Indian History and Archaeology, University of Patna, undertook two trial trenches at Oriup. The work was carried out under the supervision of Prof B. P. Sinha and Dr R. C. P. Singh. Two trenches, ORP-1A and ORP-2A, each measuring 6 x 4 m were laid out on two contiguous mounds, separated by a modern *kachcha* road linking up the village Oriup with Colgong. The excavation revealed four cultural periods.

Period I was marked by the occurrence of an oven and a circular fireplace, 26 cm in diameter. Associated antiquities included an archaic terracotta temple figurine, copper bangle and microlithic core. A part of the site, during this Period, seems to have been eroded. This might be due to the rise in the level of the river which probably flowed immediately to the eastern side. The lowest portion of the eroded pit yielded sherds of the black-and-red ware. Fifteen cm above this deposit, sherds of the N.B.P. Ware were found. Trench ORP-1A, however, did not reveal any trace of erosion and even the siltish deposit overlying layer 5, as in ORP-2A, was conspicuous by its absence. Pottery of Period-1 was mainly represented by black-and-red ware, both plain and painted, black-slipped and red wares (pl. III A). Associated antiquities (pl. III A and B) included a fairly large number of fishing hooks made of bone, bone-points, fluted terracotta pieces of the shape of a pipe used possibly in fishing nets, and pieces of tortoise shell, utilised as scrapers and knife. Other notable antiquities were bone-talisman, bone-styluses and stone beads of agate and carnelian, besides terracotta female figurines, copper bangles and microlithic cores.

Period II was characterized by the occurrence of the N.B.P. Ware and its associated fabrics, viz. black-slipped, grey and red wares and a few iron objects. A few fragments of black-and-red ware and one or two perforated pieces in red were also found. Trench ORP-2A revealed that the entire area during this period was affected by river action, as evidenced by the deposits of silt. The N.B.P. Ware fragments were generally of fine fabric.

Trench ORP-1A was marked by the complete absence of the silt-deposit.:

Other finds (pl. IV A and B) of this Period included iron spear-heads, nails-and ivory comb, beads of glass, stone and terracotta, ivory and terracotta bangles, terracotta chisels, bone-stylus, female figurines and a few fishing hooks, besides neolithic stone celt and sledge hammer. After the close of this Period, the site was deserted, as evidenced by weathered potsherds, possibly due to long exposure.

Period III was dintinguished by the occurrence of typical Pala pottery, as represented by the plain red ware with chocolate slip, plain grey ware and grey ware with black slip.

Associated finds included terracotta beads, terracotta seal and iron nails. Terracotta pipes used for smelting metal and metal slags were also found.

Period IV was marked by the occurrence of the medieval green glazed pottery and red ware.

Although it may not be possible to be quite precise about the chronology of the sequence, the occurrence of painted black-and-red ware from the earliest level of ORP-2A may provide some comparable horizon with other chalcolithic sites of Bihar as well as western India.

10. EXPLORATION IN DISTRICT SINGHBHUM.—The Prehistory Section of the Department of Anthropology carried out further work on the research project on Neolithic Culture in this District. The work was concentrated along the river Sanjai near Sini Railway Station. Special emphasis was given to a small mound (40 X 14 m) which overlies a land surface of red soil underlain by gravels. The mound itself consists of dark soil on the top, underlain by dark brown soil. From various levels the site yielded pots and potsherds, stone implements wood charcoal, burnt clay, bone fragments and (for the first .time) iron objects and carbonized rice. Of these, pottery constituted the most prominent trait. Both handmade and wheel-made pottery, was in use. Largely plain in surface treatment, it was found in shades of red and black, dark brown, light red, grey and black wares. A noteworthy discovery, however, is the occurrence of iron objects in association with a large number of polished stone axes and carbonized rice in a pit.

11. EXPLORATION AT SONUA, DISTRICT SINGHBHUM.—A team, led by Dr Sita Ram Roy of the Directorate of Archaeology and Museums, Government of Bihar, Patna, explored a prehistoric site on the right bank of the Sanjay river—about half a kilometre away from the Sonua Railway Station. Upper Palaeolithic side-scraper on quartzite, a few microliths on chert, a fragment of a neolithic mace and axe of neolithic celt on fine grained red stone were picked up. Around Lotapahar hill, the team located Late Stone Age sites yielding microliths, of both geometric and non-geometric type.

12. EXCAVATION AT LOTAPAHAR, DISTRICT SINGHBHUM.—With a view to establishing a Stone Age cultural sequence the Directorate of Archaeology and Museums, Government of Bihar, carried out an excavation of an ancient site. The work was carried out by Dr Sita Ram Roy under the general direction of Prof B. P. Sinha.

Two trenches, labelled LTP-1 and LTP-2, each measuring 15 X 12 m, were laid out. The former (pl. V) was dug to a depth of 2 m near the north-western fringe of the Taritragupta hill and on the left bank of the Sanjay river in village Govindpur and the latter was excavated to a depth of 3 m on the right bank of the Sanjay river in village of Dalki. The former revealed two cultural periods. Period-I, was characterized by Upper Palaeolithic tools, represented by scrapers on chert and quartzite and Period II by the occurrence of microliths (pl. VI A) of both geometric and non-geometric variety. The latter trench revealed only one cultural Period, about 21 m in thickness, and associated with microlithic tools of both geometric and non-geometric categories.

Besides, a few Lower Palaeolithic tools (pl. VI B) on quartzite were found embedded on the surface of Trench LTP-1.

CHANDIGARH

13. EXPLORATION IN CHANDIGARH.—Shri Suraj Bhan of the Department of Ancient

Indian History and Culture of the University of Kurukshetra, during the course of his exploration in the Union Territory of Chandigarh, located an ancient mound each at (i) Manimajra, yielding the Painted Grey Ware and (ii) Chandigarh itself, yjeldjng jate Harappan Pottery.

GUJARAT

14. EXPLORATION IN DISTRICTS AHMADABAD, BANAS KANTHA, JAMNAGAR AND MEHSANA.—The Department of Archaeology, Government of Gujarat, during the course of an exploration in the above mentioned Districts located four Harappan (abbre-) viated as H) and three Historical (abbreviated as EH) sites.

District	*Taluk*	*Site*	*Cultural affiliation*
Ahmadabad	Dhandhuka	Devagana	H
-do-	-do-	Jobala-nes-no timbo	
-do-	-do-		H
-do-	Viramgam	Talavadi-no	
Banas Kantha	Vav	Timbo	H
Jamnagar		Shihori	EH
Mehsana		Benap	H
		Suvarnatirtha	EH
		Vadnagar	EH

15. EXPLORATION IN DISTRICTS BARODA, BROACH, BULSAR AND SURAT.- With a view to (a) ascertaining the extension of the late Harappa culture and (b) examining its relationship with the known chalcolithic cultures of the Deccan plateau, a joint expedition of the University of Cambridge, U.K and the Archaeological Survey of India, consisting respectively of Dr. F.R. Allchin and Dr (Mrs) B. Allchin and Shri J.P. Joshi carried out extensive exploration of the area, particularly the lower courses of the Narmada and Tapti, and the estuaries of Ambika, Auranga, Damanganga, Kim, Mindola, Par and Purna rivers. In all, fifty-four sites were visited, of which twenty-six were newly discovered. These included Middle and Late Stone Age sites at Adityeshwara on the Narmada near Wagadia, District Broach, which yielded an industry mainly of agate. Of the remaining sites, the following deserve special mention:

(i) Chavaneshwari, located on the Narmada in District Broach, was in an eroded rain gulley, adjacent to an extensive early historical mound. Painted black-on-bright red ware including dishes, dishes-on-stand and high-necked jars along with a coarse gritty red ware, mainly represented by fragments of jars were found. The design repertoire includes chiefly linear designs having affinities with Rangpur II B and II C.

(ii) The ancient site at Malvan near Dumas, District Surat, on the south bank of the Tapti estuary, is located on a subsidiary inlet and thus extends this culture southwards to the Tapti basin. The mound, though eroded on the northern side, seems to be of considerable extent with a scatter of pottery in an area of more than 201 X 94 m. A single period late Harappan occupation of 0.75-5 m thick is exposed on the edge of the mound.

The principal ceramic industry industry is a fine well-fired red ware giving a resonant ring when struck, frequently painted with black pigment on a bright red to brownish surface. The forms represented in this ware are dishes, carinated dishes-on-stand, jars, bowls and miniature jars. The design repertoire consists of plain bands, thick and thin, hanging loops interlaced, both on body and rim. The shapes are comparable to late Harappan types from Rangpur II B and II C and Bhagatrav. Closely-related to this assemblage is a buff ware generally available in the Harappan sites of Saurashtra and Kutch and sometimes painted in thick brownish to red paint with a few examples giving a polychrome effect.

The next ceramic tradition in point of frequency is a red ware made from less finely A, levigated clay and also less uniformly fired. As compared to the principal red ware discussed above there is marked decrease in the typical Harappan forms. The pottery is mainly unbrunished, but has a bright red slip sometimes painted. The design repertoire is more varied and consists of plain horizontal bands, spirals, cross hatched chequers, groups of vertical wavy lines within bands and horizontal ladder patterns within bands, cross hatched triangles and lines of chevrons within horizontal bands. The design elements tend to have a general affinity with those of Northern Deccan Chalcolithic and Malwa Wares. Black-and-red ware, was also fairly common. Besides these wares, a coarse pottery, mainly hand-made, ill-fired and often with a white gritty content in the core, and chocolate in colour, represented about one fifth of the total collection. Many of the forms were reminiscent of coarse wares of Jorwe-Nevasa complex.

Settlements of early historical period were located at Chavaneshwar and Bharhut in District Broach on the north bank of the Narmada and at Mathwogha on the southern bank. In particular, Bharhut, where the remains of this period seems to have been eroded away, produced red polished ware and a coin.

Sites of early to late medieval period are relatively more common and indicate a much more extensive area of habitation. Medieval ports were located at Dahej and Bharhut, Bhagwa and Dherwara. These sites yielded a large amount of glazed pottery and Caledon ware. The explored sites are listed below:

(LH=Late Harappan ; C=Chalcolithic ; EH=Early Historical; M=Medieval; MSA=Middle Stone Age ; LSA=Late Stone Age).

District	*Taluk*	*Site*	*Cultural affiliation.*
Baroda	Chandod	Chanded	M
-do-	Broach	Broach	EH
-do-	-do-	Chavaneshwara	LH, EH
-do-	-do-	Dongri-no-Tekro	EH, M
-do-	-do-	Bharhut	EH
-do-	-do-	Mehgam	LH
-do-		Telod	LH, EH, M
-do-	-do-	Vijalpur-I	M
-do-	-do-	Vijalpur-II	EH
-do-	Hansot	Bhagatrav	LH
-do-	-do-	Visod	M
-do-	-do-	Wamaleshwar	M

District	*Taluk*	*Site*	Cultural affiliation
Broach	Jambusar	Andhi	M
-do-	Jhagadia	Kadiya Dungar	EH
-do-	*-do-*	Limbodra	EH to M
-do-	Nandod	Aditeswara	MSA, LSA
-do-	Vagra	Dahej	M
-do-	-do-	Makhneswara	M
-do-	-do-	Mathwagha	EH, M
Bulsar	Bulsar	Hingloj	M
Surat	Bardoli	Kadod	LSA
-do-	Chaurasi	Malvan	LH
-do-	-do-	Rander	M
-do-	-do.	Varial	M
-do-	Kamrej	Jokha	C
-do-	-do-	Kamrej	EH.M
-do-	Navasari	Dherwara	M
-do-	-do-	Dhunda	M
-do-	-do-	Kasbapa	LSA
-do-	-do-	Navasari	M
-do-	Olpad	Bhagwa	M
-do-	-do-	Thunda-Wagha	M

Period II (*circa* sixth century B.c.-first century A.D.) was characterized by the use of red and black ware, square biconical beads, large ear-rings, dagger-shaped bone pendants, etc.

Period III {*circa* first-sixth century A.D.) was largely disturbed by deep and constant ploughing. Pottery of Early Historic period and Medieval period were found mixed up.

HARYANA

17. EXPLORATION IN DISTRICTS AMBALA, HISSAR, JIND AND KARNAL.—Shri Suraj Bhan of the Department of Ancient Indian History and Culture of the University of Kurukshetra explored the old_beds of Saraswati and Drishadwati rivers, falling in District Ambala right up to the Rajasthan border. In the course of his survey, he discovered the following sites, ranging from the Pre-Harappan Culture to the Medieval period. Noteworthy among these, however, were Hirka, Mitathala, Pali, Rakhi Garhi and Siswal in District Hissar. The explored sites are listed below:

(PH=Pre-Harappan; H=Harappan; LH=Late Harappan; PGW=Painted Grey Ware; GW=Plain Grey Ware; EH=Early Historical; R=Red Ware; and M=Medieval).

District	*Site*	*Cultural affiliation*
	Mustafabad	PGW
Ambala		
Hissar	Alipur Kharar-1	PH
-do-	Alipur Kharar-2	PH
-do-	Alipur Kharar-3	PH
-do-	Baddi Maidi	EH, M
-do-	Bhaudin-1	M
-do-	Bhaudin-2	M
-do-	Bhaudin-3	M
-do-	Bhaudin-4	
-do-	Bhimpura	M
-do-	Bhiwani Khera	PGW
-do-	Bhuna	EH,M
-do-	Bora	GW
-do-	Buddha Bhana	
-do-	Burj	LH, PGW
-do-	Chandoh Kalan	M
-do-	Chimun	H
-do-	Daryapur	M
-do-	Dhamora	M
-do-	Ghaswa-1	PH
-do-	Ghaswa-2	PGW
-do-	Gidranwali-1	M
-do-	Gidranwali-2	M
-do-	Gilhan Khera-1	M
-do-	Gilhan Khera-2	M
-do-	Gilhan Khera-3	M
-do-	Haboli	M
-do-	Haripur	M
-do-	Harnia	

District	*Site*	*Cultural affiliation*
Hissar	Hijrawan Khurd-1	M
-do-	Hijrawan Khurd-2	M
-do-	Jhanda Khurd	M
do-	Kalotha	M
-do-	Karnauli-1	M
-do-	Karnauli-2	M
do-	Kaulgarh	PGW, EH
-do-	Kesu Wala	M
-do-	Kirad Kot	M M
-do-	Kirka	PH, H
-do-	Kutte Waddha	M
-do	LaU-1	M
do	Lali-2	M
do-	Madho Singhana	R
-do	Majjal Theh	GW
-do-	Mangala-1	M
-do-	Mangala-2	R
-do-	Mata Shyam	PH
-do-	Mauju Khera	M
-do-	Milakpur	EH
-do-	Mirzapur	M
-do-	Modia	R
-do-	Moriwala	M
-do-	Nagrana	M
-do-	Ottu	R, M
-do-	PaU-1	GW
-do-	Pali-2	PH, H, GW
-do-	Patali	M
-do-	Patan-1	M, PH
-do-	Rakhi Garhi	PH H
-do-	Rakhi Shahpur	PH
-do-	Rampur Theh	M
-do-	Rania-1	M
-do-	Rania-2	GW, M
-do-	Rania-3	M
-do-	Rania-4	M
-do-	Ratta Khera	M
-do-	Ratta Theh	PH, H
-do-	Ratta Tibba	PGW
-do-	Rupan Wali-1	PGW
-do-	Rupan Wali-2	PGW, GW
-do-	Saleem Garh	PH
-do-	Satrod Khurd-1	PH
-do-	Satrod Khurd-2	PH, M

District	Site	Cultural affiliation
Hissar	Shahpur	PH
-do-	Sikandarpur-1	R, M
-do-	Sikandarpur-2	M
-do-	Sirsa	R, EH, M
-do-	Sirsa-1	PH
-do-	Sirsa-2	M
-do-	Sirsa-3	PH, H
-do-	Siswal	PH, H
-do-	Talwara	PH, GW
-do-	Talwara Khurd	R, M
-do-	Thehri Rasulpur-1	M
-do-	Thehri Rasulpur-2	M
-do-	Theraj (Chakko)	PH
-do-	Tokas	R
-do-	Uklana	EH, M
-do-	Vannanwali	PH, H
-do-	Wani-Dhani Ram Pratap	M

	Singh	
-do-	Barsana-1	EH, M
-do-	Barsana-2	PH
-do-	Ikas	EH, M
-do-	Ittal	GW, EH
-do-	Jind Bir Bada Ban	PH, H, EH
-do-	Kasuna	GW, M
-do-	Khokhari-1	LH, GW
-do-	Khokhari-2	LH, GW, M
-do-	Manhorpur	LH, GW
-do-	Ritoli	H, GW
-do-	Sangat Pura	H
-do-	Banehra	LH, GW
-do-	Baola	H, GW
-do-	Barhi	EH
-do-	Bodha	LH
-do-	Dachar	PH
-do-	Guhla	GW
-do-	Hallan	GW

-do-	Jatheri	LH, GW
-do-	Kasiala	GW
-do-	Ladwa	GW
-do-	Mangna	M
-do-	Maudi-1	M
-do-	Maudi-2	H
-do-	Mohanpur	LH
-do-	Morthali	PGW

District	Site	Cultural affiliation
Karnal	Mohna	LH
-do-	Mundh-1	GW, EH
-do-	Neesang-1	GW
-do-	Neesang-2	LH
-do-	Pai	M
-do-	Pilana	LH
-do-	Popdan	GW
-do-	Pujam	H, GW, EH
-do-	Rajaund	GW, EH, M
-do-	Rasulpur	GW, EH
-do-	Ratta Khera	H
-do-	Rattak	GW, EH, M
-do-	Sambhi	GW
-do-	Staur	GW
-do-	Thal	GW, EH

18. EXPLORATION IN DISTRICT GURGAON.—Shri H. K. Narain of the North-western Circle of the Survey explored a Painted Grey Ware yielding site at Aharwan in Tahsil Palwal. A large number of brick structures belonging to the Sunga-Kushan periods were noticed in the exposed sections and rain-gullies.

HIMACHAL PRADESH

19. EXPLORATION IN DISTRICTS KANGRA AND MANDI.—Dr R. V. Joshi of the Pre history Branch of the Survey, assisted by Shri S. B. Lai, Shri B. P. Bopardikar and Shri Shankar Nath, carried out prehistoric exploration in District Kangra. The main objective of this Survey was to investigate the sequence of the Pleistocene events in the Banganga_and Beas valleys. The Survey in the year 1957 had shown the presence of morainic deposit on the Third Terrace (T_3) at Guler. It was necessary to trace the extent and the origin of this deposit in the valley and to collect data for the other glacial deposits, if present, in the valley. The other objective was to locate_the Stone Age sites with a view to estimating the prehistoric potentialities of the area

As far as the stratigraphical and glacial or Pleistocene climatological data of this region is concerned, the party was able to collect more information relating to the extent of the morainic deposits and of the quartzite boulder-spread in the valley. The samples of deposits associated with the granitic boulders and the terraces have been collected for chemical and petrological studies, and it is hoped that they would yield some information on this problem for further work. However, it is not possible at this stage to say anything definite about the correlation between the terrace sequence and the Pleistocene glacial

phases in this sub-Himalayan region. . .

The most important and interesting discovery of the season was the finding of a handaxe industry in the lower Beas valley. Although no clear handaxe was obtained, the collection of cleavers appears to be indicatcive of the presence of Acheulian industries in this area.

For the purpose of tracing the extent of morainic (glacial) deposit, previously encountered, in Terrace T_3, as well as that of quartzite boulders occurring on T_1 and T_2 Terraces at Guler, the region between Dharamshala and Baijnath was surveyed. Excepting at Guler, the loose and unassorted quartzite boulders were rarely met with within the Banganga valley. Only a few were noticed near Samloti adjacent to the road towards Baijnath. :

Stratigraphically, this boulder bed appears., to be the coarser fades of the upper Siwalik conglomerate occurring at Kangra. The Kangra conglomerate itself lies on the lower-middle Siwalik sandstones, and a terrace has been developed on them. This terrace also contains granite boulders as have been noticed on Terrace T_3 at Guler. Kangra lies about 27 km upstream of Guler. We have thus been able to establish the relation and extent of quartzite and granite boulders in the context of the terraces over this distance on the Banganga river.

Above the Kangra, the Banganga traverses a somewhat levelled tract after emerging, with a steep gradient, through the Dhavaldhar hills in the north. In most of the places this level tract is made up of thick glacial deposits of indeterminate age, containing huge boulders of granite and variety of metamorphosed rocks and clays and the Banganga and similar other streams have cut their courses through it, exposing this material on the high cliff of their banks.

A massive spread of this material was noticed in the Banganga river-bed, a little above the township of Kangra. In some respects its components appear different from those met with at 19.5 km above the river level at the same place in association with the terrace deposit. Thus there appear to be at least two levels (terraces) in the Banganga river valley, yielding some evidence of glacial deposition.

No fossils were found in the Siwalik beds or in the boulder bed at Guler, which have facilitated the correct demarcation of the various geological strata in the region.

The Stone Age artifacts were collected from the following sites in the.Banganga, Patalganga and lower Beas rivers and tributaries, and also from the open-air sites which are not directly connected with particular drainage system.

(i) Kangra-Nandrul: an almond-shaped handaxe on cherty banded quartzite, a rolled ovate and four flakes on chert were obtained at the base of the terrace on which stands the village Nandrul at the confluence of the Patalganga and Banganga.

(ii) Guler: unifacial and bifacial choppers and flakes were collected from the slopes between T_1 and T_2. One unifacial chopper found on T_1 shows secondary working.

(iii) Haripur: at the foot of the terrace, on which stands the school at Haripur, and towards the river bank, a few tools, mostly rolled, were obtained from the surface. ,

(iv) Bangoti: it lies on the low-lying terraces, mostly in irregular levels on the dry river-bed in the nullah not away from the confluence of the Beas and Banganga. From the terrace slopes were found five rolled and unifacially worked choppers.

(v) Dera Gopipur: the terraces on the Beas at this locality have yielded in the past large number of pebble tools. During recent explorations seven unifacial and four bifacial choppers were obtained. One of the bifacial chopper is of a flake-scraper type, while the other is on core, and is extensively flaked.

(vi) Dhawala: it is situated on the right bank of Nakehr, Khad, a tributary of the Beas on Jawalamukhi-Dera Gopipur Road. Here, the right bank is composed of pebble-bed (containing mostly quartzite boulders and pebbles), which is overlain by 1-m thick silt. The basal rock is composed of grey shales. At the base of the right bank and in the river bed, four choppers on quartzite, three cores, including one on chert, scrapers on chert

flakes, flakes and points, one pebble-butted handaxe of doubtful nature, were obtained. It is a mixed industry and the tools made on chert appear to be of Middle Stone Age.

(vii) Several streams drain into the Beas on its left bank opposite Dera Gopipur. They have steep gradients, but the beds are heavily choked up by the thick accumulation of pebbles and in most cases, appear dry. One of these, the Thor Khad, has a fairly wide bedfull of pebbles. Near the Jammal village at higher terrace levels, good number of unifacial choppers and flakes were discovered.

(viii) Kotla: it is situated on the Chumar nullah, a tributary of the Beas. Here, the tilted sandstones of Middle/Early Siwalik lie athwart the stream. Wherever the inter-bedded shales are eroded, the landscape presents a sort of low parallel 'ridge-valley' forms. From the silty deposit, choppers, discoids, cleavers, flakes, and cores were obtained. This is ah important site, as for the first time it has provided a clear evidence of the presence of handaxe industry in the Beas valley at an altitude of about 510 m which is about 60 m above the Beas river bed. Out of the two cleavers obtained, one is made on a flake with rounded butt and oblique cutting edge.

(ix) Panjasaran: on the road from Nurpur to Jawali, about 9-65 km from Jesur, near the locality called Raja-ka-Talab, is an important site. Here, three cleavers, choppers, discoids, a few scrapers, flakes, and cores were obtained in mint condition from the clay. The region presents a rolling topography with low hillocks of silt and clay, which in places, is dark red or brown due to intense weathering.

(x) Kupar Lahr: opposite the railway station of the same name near Kangra, was obtained an interesting collection of small tools on chert. The tools comprise cores, points, scrapers and borer. Besides these implements, which are either of Middle Stone Age or Lower Stone Age, one chopper and a flake scraper on quartzite, perhaps belonging to the Early Stone Age, were also pickedup from the same locality.

On way to Siunta *via* Shahpur on Kangra-Pathankot road, a few tools, mostly choppers, in rolled condition were found near Hatli and Rait villages.

In District Mandi, choppers on pebble were also obtained from the Beas river bed.

JAMMU AND KASHMIR

20. EXPLORATION IN DISTRICT JAMMU.—Shri Hari Mohan Saroj, a research scholar of the Department of Ancient Indian History and Culture, University of Panjab, in the course of his field exploration, located two Sohanian pebble-tool sites at Nagrota on the Tawi and Koota on the Bei. Three Terraces, respectively at 24-38, 9-14 and 1-5 m heights from the present river-bed were noticed. Of these, only the upper two Terraces were found to be implementiferous. Choppers, scrapers, discoids were the main tool-types in the collection. A few flakes, showing proto-Levalloisian and Levalloisian techniques were also seen. Koota is some 50 km from Jammu-Pathankot road, where three Terraces along the Bei nadi, a tributary of the Ravi, were noticed at the heights 21-33, 9-4 and 1-5 m from the level of the river-bed. Tools were found from T_2 only. Like Nagrota, the collection comprises Sohanian pebble-tools and flakes.

21. EXCAVATION AT BURZAHOM, DISTRICT SRINAGAR.—The Frontier Circle of the Survey resumed *(1965-66,* pp. 19-21) the excavation at Burzahom. The work was under taken with the assistance of Sarvashri Sardari Lai, R. K. Pant, S. S. Saar, S. N. Tikoo, Puran Singh and R. N. Kaw. The objectives of this year's excavation was largely to obtain an integrated plan of square or rectangular pits belonging to Period I. The outline of one

such pits was exposed to the south of the megalithic complex. The western side of the pit, having already been exposed previously, the dig had to be extended in trenches C-4 to C-7 and B-7. The excavation revealed that the pit (pl. VIII A) was rectangular on plan and measured approximately 6-40 X 7-0 m (21 X 23 ft), dug to a depth of 4 ft. The occupational deposits were found to dip towards the centre. A hearth, circular on plan, was found near the centre of the pit. A noteworthy feature of the pit, however, was a shallow drain running all around the periphery. Within the pit, a group of post-holes and storage places were found. The post-holes clearly suggest a timber superstructure for roofing purposes, as testified by a sizable quantity of wooden material found in one of the post-holes. The roofing pattern, however, could not be clearly ascertained. The pit described above lies in close proximity to two circular dwelling pits of Period I, suggesting that both types of structures were current during the period. A few more square/rectangular pits of Period I were located to the north of the megalithic complex. The general outline of plans is very nearly the same, except for minor variations. Because of the reconstruction at various stages and the superimposition of mud structures of Period II, the basic plans were not determined. The floor levels of the pits of Period II were also located. Among the noteworthy finds obtained from the excavation (pl. VIII B) were bone tools and a crucible.

KERALA

22. EXPLORATION IN DISTRICT TRICHUR.—Shri K. Chandrasekharan of the Southern Circle of the Survey located: multiple-dolmens on the Pattazhapara hill in Varandarapally village; menhirs at Kodarunur, Kottanallur, Kuthur, Pulayakkal and Vilvattam; dolmenoid cists at Pariyaram; urn-burials at Karalam, Porappukara Nadattara, Porattusseri and Vilvattam; mural-paintings on the sanctum walls of Karthiyayani temple at Ayyantol and Perumanam Siva Temple at Cherpu; wood-carvings on the ceiling of the *mandapa* of the Vishnu Temple at Anandapuram, eastern and the western gateways in Annamandapa Siva Temple at Kallur, and at Ayyantol, Cherpu, Irinja-lakuda, Killannur and Urakam. Some good sculptures of medieval date were also found at Irinjalakuda.

MADHYA PRADESH

23. EXPLORATION IN DISTRICT INDORE.—Dr R. V. Joshi and Prof H. D. Sankalia discovered a Middle Stone Age site, about 3 km from Indore. All the tools are made of very coarse quartzite and are spread over very low hillocks. In fact, these are found on the different outcrops of trap. The most interesting thing is that though the material is not very good, very fine tools seem to have been prepared on Levallois technique. We have in fact some genuine examples of prepared core and flake tools. The tools include points, borers and cores.

24. EXCAVATION AT TRIPURI, DISTRICT JABALPUR.—In continuation of the last season's work, (1965-66, pp. 21-22) the excavation was resumed by the Department of Ancient Indian History, Culture and Archaeology, University of Saugar, under the direction of Prof K. D. Bajpai, assisted by Dr U. V. Singh. The main objectives of this season's work were twofold: to examine the lower levels with a view to establishing chalcolithic occupation; and (ii) to obtain cultural remains of the period A.D. 400-900. The excavation conducted earlier by Dr M. G. Dikshit during 1952-53 had brought to light the remains of a culture which was designated by him as Protohistoric or Chalcolithic (Period I). The evidence, being too meagre, required further confirmation. Although last year's excavation

did not reveal any trace of the chalcolithic culture, the discovery of four neolithic implements from the surface, required adequate exploration. Furthermore, the earlier excavation did not throw any light on the period ranging between *c.* A.D. 400 and the beginning of the Kalachuri rule in the ninth century when it became the capital of the Kalachuris.

In all, four trenches named TPR-5 to TPR-8, were sunk on four different mounds; of these, TPR-5, measuring 2 X 2 m, was a trial trench.

This season's excavation did not reveal any trace of the chalcolithic or neolithic habitation. The fourfold sequence of cultures obtained last year, however, was confirmed. The discovery of an Indo-Sassanian coin indicated that the site had been under occupation during the fifth-sixth century A.D. The remains of the Kalachuri period were encountered at TPR-8; the material, however, was found to be much disturbed.

Period I *(c.* 500-300 B.C.): The deposits of this Period were characterized by the presence of the N.B.P., black-and-red, coarse red and whitish slipped wares. Excepting a few patches of rammed mud floors and fire-pits, no remains of the structures were noticed. The occurrence of terracotta tiles showed their use as roofing material. The other finds of the Period included beads of different material and miscellaneous objects of iron, terracotta and stone. An interesting find in copper was the figure of a bull. Two human skulls were found in the western section of the trench TPR-8. Due to the restricted area of the excavation exact orientation of the skeletons and their nature, etc. could not be ascertained.

Period II *(c.* 300-100 B.C.) was marked by the occurrence of a fine red ware with shining surface. In addition, all the four wares of the preceding period, also continued. Baked bricks, tile-pieces and ring-wells were also encountered in the deposits belonging to this Period. Undressed stones were used in the foundations of the walls. Two storage pots were found *in situ.* Miscellaneous finds in various materials, including a few copper punch-marked and cast coins, also occurred. One round cast copper coin of the Tripuri *Janapada* with the legend *Tri puri* in bold Brahmi characters of about 200 B.C. and bearing moon-on-the-hill symbol was of special interest.

Period III *(c.* 100 B.C.-A.D. 200) was distinguished by the use of large-sized baked bricks (size : 40 X 25 X 7½ cm) in the floors (pl. IX B) or platforms with post-holes. Several lead and copper coins of the Satavahana rulers and a few copper punch-marked and cast coins were also recovered. Other finds included pottery, stamped with Buddhist symbols, small vessels in soft stones, kaolin wares and sprinklers. Among coins three deserve special mention: one round lead coin, bearing the figure of a standing male deity on its obverse and the Ujjain symbol with the Brahmi legend *(Si) ri Sata (sa)* on the reverse; another Satavahana circular lead coin, bearing on the obverse a crude human figure in standing posture, and on its reverse a flowering tree-within-railing and the Ujjain symbol *(vqjra)* with crescent and the third coin of Sujethasena, with the hill symbol flanked by wavy lines and the border on the reverse and Brahmi legend reading *Su (jetha) senasa* on the obverse. Two other important finds of the period were a religious symbol in copper and an ear-ring in red jasper (pl. IX A).

Period IV *(c.* A.D. 200-400) was represented by circular pavements of baked brick-bats, soak-pits, mica-dusted pottery, sprinklers and punch-marked coins. The other finds included glass and shell beads and various objects of iron, copper, terracotta and stone.

Among the outstanding finds of the excavation, mention may be made of circular sealings of baked clay, bearing Brahmi legends. Palaeographically, these sealings can be assigned to second-third century A.D. Four of these mention the title *Vasisthiputra Maharaja* and the names of rulers Sivabodhi and Vasubodhi. The sealings bear an arched hill in the centre with a cresent above it and wavy vertical lines on its either side. Another

sealing bears the figure of a seated lion with upraised tail in the upper half and an inscription of two lines in the lower half. The inscription is partly affected. These sealings have given us the names of new kings (Sivabodhi and Vasubodhi) who ruled over the Tripuri region during the second-third century A.D. and who seem to have belonged to the Bodhi dynasty.

Besides the above mentioned four periods, remains of fifth and sixth centuries A.D. and of early Medieval (Kalachuri) period were also encountered at TPR-8. Here, the upper layers were found to be very much disturbed, yielding mixed remains of Period IV and of later periods. In these disturbed layers were found a circular silver Indo-Sassanian coin of the altar type and a gold coin of a Kalachuri ruler with the figure of Lakshmi on one side and the letters *...ja...deva* on the other.

25. EXPLORATION IN DISTRICT NIMAR.—In continuation of their programme for the study of the prehistoric Narmada, the Prehistory Branch of the Survey, represented by Dr R. V. Joshi and the Deccan College Post-graduate and Research Institute, Poona, Prof H. D. Sankalia and his colleagues, explored the Narmada near Maheshwar. In the year 1965, the Narmada was studied from Amarkantak to Hoshangabad and the complexities of the problem of the Pleistocene stratigraphy and the associated Stone Age Cultures were noted down. In order to have a comparative view, the course of the Narmada outside the main alluviated tract was selected for this year's investigation.

The lateral extent of the alluvium is about 3 to 5 km on either bank, but is largely available on the southern portion of the valley. The total depth of the alluvium is about 40 m out of which about 30 m has been cut down and exposed by the present Narmada. The outcrops of basaltic rocks at various levels below the alluvium show the unevenness of the predepositional valley of the Narmada.

The alluvium in general is composed of silts and fine sands with intervening layers, sometimes discontinuous, of bouldary and pebbly gravels. The bouldary gravels are dominated by the quartzite and sandstone boulders though the Narmada flows through the basaltic terrain. The quartzite boulders were found in the old gravel bed of the Karam river, a northerly tributary of the Narmada. The old gravel here was dominated by locally derived basalt boulders. These observations indicate the influence of alluvial processes over the colluvial ones during the aggrading phase of the prehistoric Narmada, as these boulders can come only from the sandstone/quartzite outcrops, exposed some 35 km upstream of Maheshwar.

The first boulder gravel was found to occur at the water level on the northern bank of the Narmada near Ganesh nullah. The gravel, about 3 m thick, was found to rest on the rock and was capped by the red brown *kankary* silt, about 5 m in thickness. This gravel yielded a few Early Stone Age tools.

The most conspicuous second bouldary gravel deposit, about 4 m in thickness, occurs at about 5 m height from the water level of the Narmada. This gravel, which is underlain by red brown *kankary* silt, and overlain by yellow brown *kankary* silt, is very well exposed in the Maheshwari river, about 1-6 km upstream of Maheshwar and in Kasrod nullah, about 34 km upstream of Maheshwar but on the south bank. Little downstream of the bridge at Khalghat, this gravel is well exposed on the south bank of the Narmada for a distance of about 600 m. This gravel yielded a few Early Stone Age tools.

At a level of about 16 m from the water level another bouldary gravel was observed in Bothu and Kasrod nullahs. No tools could be collected from this horizon. The pebbly

and sandy gravels, at times cross-bedded, occur at various levels in otherwise sandy-silty alluvium. Some Middle Stone Age tools had been collected by the earlier workers from these gravels.

In general, the Stone Age tools *in situ* are rare and so far no fossils have been found in this area. Terrace-like levels at 30 m, 20 m and at 8 m from_ the water level are seen at various places, especially in the southern portion of the alluvium. The terrace at 5 m. is composed of sub-recent alluvium. But the earlier two terrace levels are difficult to be interpreted both archaeologically and geomorphologically without detailed mapping of the various sediment bodies in and around Maheshwar.

26. EXPLORATION IN DISTRICT SHAHDOL.—Under a scheme of the University Grants Commission, a small project to explore two ancient sites of the District was undertaken by Shri Krishna Kumar of the Government P. G. College, Shahdol.,

Antra is situated 9-65 km from Shahdol on the road Kilmania. Several mutilated sculptures, some of them also inscribed on the base, were found at the site.

At Panchagaon, 8 km. from Shahdol, many sculptures, representing Siva, Parvati, Ganesh, Yaksha, Yakshi, etc., were seen.

Two groups of archaeological remains were noticed at Singhpur. On the eastern bank of Rajha Tal, is a small temple, dedicated to Goddess Chamunda. In front of this temple two small pieces of sculptures of Narasingh and a female devotee were found. Four images of Jain cult were found on the northern wall of the temple.

The monument known as Panchmatha was explored. Besides the door-jambs which seem to have been brought from some other place and erected here, the Buddhist statue, possibly of Tara, was found fixed along the wall of the building by the side of the southern gate. On the top of the statue the symbol of *stupas* on either side and series of Buddhas in different *mudras* are clearly represented. The sculpture was also inscribed but the inscription is totally defaced and cannot be deciphered.

MADRAS

27. EXPLORATION IN DISTRICT CHINGLEPUT.—Dr K. D. Banerjee of the Prehistory Branch of the Survey, assisted by Sarvashri H. N. Singh and S. N. Jaiswal of the Atlas Branch, discovered Early Stone Age sites at Bommajikonam in Taluk Ponneri, Sanjaigaram and Ernankuppam in Taluk Tiruvallur.

28. EXCAVATION AT VADAMADURAI, DISTRICT CHINGLEPUT.—Dr K. D. Banerjee of the Prehistory Branch of the Survey, assisted by Sarvashri H. N. Singh and S. N. Jaiswal of the Atlas Branch, excavated a rich Early Stone Age site at Vadamadurai in Taluk Tiruvallur. The stratigraphy of the site is as follows (from bottom upwards):

(i) Sriperumbudur shale.

(ii) Boulders and gravels in the matrix of sand and clay, composed of boulders and gravels of Satyavedu sandstones. A few extremely rolled early Acheulian tools were found in the deposit.

(iii) Lateritic gravel containing detrital laterite and quartzite boulders. Acheulian tools in manufacturing stages were found in fresh condition in this deposit.

(IV) Lateritic clay. This deposit also contains tools identical to the ones in the underlying deposit.

The site, therefore, shows only the industry with a possibility of redeposited earlier Acheulian industry, found in the gravel deposit.

29. EXPLORATION IN DISTRICT DHARAMAPURI.—Shri B. Narasimhayya of the Southern Circle of the Survey explored a site yielding neolithic axes and pottery at Togarapalli in Krishnagiri Taluk. A number of megalithic cairn circles and a few hero-stones were also found at the same place.

Megalithic and early historic sites were found at Kannukanur, Upparapatti, and Vedaratattakkal in Krishnagiri Taluk. Cist-burials were located at Baleguli, Kuchukal-pattu and Viramalai in the same Taluk, Inscriptions of medieval date were noticed in the Airavateswara temple, Mallapuram and Gangavaram. Tamil Vatteluttu inscriptions, probably of the ninth century A.D., was noticed at Pavakkal.

30. EXCAVATION AT KARAIKADU, DISTRICT SOUTH ARCOT.—Among the sites surveyed by Dr Yves Martin of the Institute de Physique du Globe, Paris (on behalf of the French Institute of Pondicherry) for the proton-magnetometric investigation, Karaikadu and Kaveripattinam were taken up by the Southern Circle of the Survey for trial digging, the other sites surveyed being Uraiyur, District Tiruchchirapalli, and Kambarmedu, District Thanjavur.

The trial excavation at Karaikadu was carried out by Shri K. V. Raman who found vestiges of a culture datable to the first century A.D. Though no regular structure was available in the limited area of the dig, at two places, brick-debris was encountered. A number of beads (pl. X) of semiprecious stones like crystal, jasper, chalcedony, agate and carnelian, in various stages of manufacture, were found in the strata. The occurrence of a large number of finished as well as unfinished glass beads, together with an equally large quantity of shapeless vitreous slags, indicated local manufacture of glass for making beads. Three principal ceramic industries were found: (i) red-slipped ware; (ii) black-and-red ware and (iii) the Rouletted Ware. Among these, the black-and-red pottery seemed to be limited in use and was rather coarse. Simple bowls with rounded base and carinated cooking vessels were the characteristic types. The Rouletted Ware was the distinguishing fabric for fixing the chronological horizon. This Ware was found in its typical pink and grey colour. The characteristic types are dishes with beaked rim and incurved sides. Besides, a number of fragments of the conical bottomed amphorae in coarse red fabric were also met with.

Karaikadu seems to have been an Indo-Roman trading station on the Coromandel coast like Arikamedu, from which it is only about 30 km further south.

31. EXCAVATION IN KAVERIPATTINAM, DISTRICT THANJAVUR.—Shri K. V. Raman of the Southern Circle of the Survey undertook trial excavation at Kaveripattinam with a view to checking up the findings of the proton-magnetometer investigation in the area immediately to the east of the Pallavaneeswaram Temple. The excavation revealed a 3-m thick habitation deposit, datable to the early and late medieval times. Besides brick d6bris, a large number of rectangular flat tiles were found. A few copper coins, apparently of the Chola kings, were also recovered. Large number of fragments of culinary and other domestic utensils of dull-red earth and a few bangles of opaque black glass were also recovered.

MAHARASHTRA

32. EXCAVATION AT CHIRKI, DISTRICT AHMADNAGAR.—Dr (Mrs.) Corvinus Karve, working under Prof H. D. Sankalia, undertook a project for the search of Early Man. The project was sponsored by the Council of Scientific and Industrial Research. During her survey of the Pravara valley, about 1-6 km from Nevasa on the way to Pravara Sangam, she found a number of Early Stone Age tools. Since the number was very large, it was thought advisable to ascertain whether they were left there by chance or belonged to the habitation of Early Man. This year, while working for the project, careful excavation was conducted, and out of the seven trenches taken up, one large trench near the river brought to light seven hundred tools. Such a large number of stone age tools in an area about 8 x 5 m indicated the existence of a camp of the Early Man. This was also proved by the fact that almost all the tools were in mint condition, and that a large number was not made of the greyish basalt or of the dykes, but of the reddish rock near which this site is situated. In this area, a line of boulders was also seen which might have supported a thicket made of *babul* or such other trees.

33. EXPLORATION IN DISTRICTS AHMADANAGAR, KOLABA AND NASIK.—Shri S. N. Rajaguru, Dr G. G. Majumdar and Dr (Mrs.) Corvinus Karve of the Deccan College and Postgraduate Research Institute Poona continued their study of the Pleistocene deposits in the Godavari and the Bhima-Krishna basins of the western Maharashtra. From the cut-off trenches of the spill-way and the main dam of the Mula at Mula-Nagar near Rahuri in Ahmadnagar District and of the cut-off trench of the proposed dam on the Godavari near Paithan, fossil bones of *Bos namadicus* and tusk of *Elephas* were collected *in situ* along with a few Middle Stone Age tools. A carbonized wood of *Terminalia Arjuna* was collected in association with the unrolled jaw of *Bos namadicus* at Mula Dam Project in the alluvium, buried below the present bed-level of the Mula. The wood sample has been dated by C-14 to about 32,000 B.P. These, as well as other geomorphic studies, indicate that the alluvium exposed in these valleys, and the associated Stone Age industries, both Early and Middle, are not likely to be older than the Upper Pleistocene.

Shri Rajguru explored R. Kundalika in District Kolaba and found Middle Stone Age tools near Roha. The evidence of raised beach was also found near Alibag.

Shri Rajaguru also studied the upper reaches of the rivers Darna and Vaitarna in the Igatpuri Taluk in District Nasik, and found evidence of Late Stone Age tools both in the clay rich deposits of the saddle dam portion of the Vaitarna Hydroelectric Project and on the ancient rock-cut terrace of the Undhol river, a tributary of the Darna. There is a clear-cut evidence of the river capture of the head waters of the Darna by the westerly flowing Vaitarna. The occurrence of the Late Stone Age tools in the saddle dam portion suggests that the behaviour of the Darna in this area took place in sub-recent times.

34. EXPLORATION IN DISTRICT DHULIA.—Continuing his work in the District *(1965-66,* pp. 29-30), Shri S. A. Sali of the South-western Circle of the Survey traced the extension of the fossil soil-bed, noticed by him last year at Brahmanvel on the river Buray, up to Burudkha, about 8 km upstream from the former. At Mahunji Pada on the same river, the following sequence of deposits was observed, from top downwards: (i) black soil; (u) blackish brown current-bedded sand and fine gravel; (iii) brownish grey silt; (iv) current-bedded sand and fine gravel (implementiferous); unconformity; and (v) red brown fossil soil. The implements recovered from the red sand and fine gravel (iv) were largely

of Late Stone Age and included one large cuboid core of chalcedony closely resembling a crested ridge (pl. XI A).

From the study of sections of the foundation wells sunk by the P.W.D. in the river bed and of the cliff-sections at Tonda on the right bank of the river Aner, another tributary of the Tapti, it was found that the thickness of the river alluvium was not less than 28 m. Here, the following deposits were observed from top downwards: (i) grey silt; (ii) current-bedded sandy gravel; (iii) yellowish kankary silt; (iv) current-bedded sand and gravel; (v) brownish yellow kankary silt; (vi) compact yellow silt; (vii) gravel with sand, pebbles, boulders and kankar; and (viii) compact yellow kankary soil.

The general stratification on the river Arunavati, another tributary of the Tapti, observed on the stretch between Mandal and Vanaval, was as follows, from top downwards: (i) light yellowish grey silt; (ii) sandy fine gravel; (iii) yellow *kankary* silt; (iv) current-bedded sandy gravel; and (v) brown calcareous clay silt.

At Amoda and Sakvad, the sandy fine gravel (ii) yielded Late Stone Age tools (pl. XI B and C) on chalcedony, which include a flattish core with a wavy ridge resembling a crested ridge, a simple burin, a pen-knife blade, a retouched blade, a point and flakes. From the current-bedded sandy gravel at Singava, Amoda and Sakvad were recovered fluted cores, scrapers of the side and hollow types, a notched point and flakes on chalcedony, perhaps belonging to the late phase of the Middle Stone Age.

On the river Tapti itself, between Jaitpur and Rudavli the following sequence of alluvial deposits was observed from the top downwards: (i) light yellowish grey or brownish silt; (ii) current-bedded sand and fine gravel; (iii) yellow silt; and (iv) consolidated sandy gravel, light reddish in colour.

The sandy fine gravel (iv) at Rudavli and Uparpina yielded half a dozen rolled Middle Stone Age tools, including scrapers, points, awls and flakes, chiefly on jasper, one specimen each being on fine-grained red basalt and agate. At Vanaval, a couple of Late Stone Age tools were obtained from the sand and fine gravel (ii) underlying the yellowish grey or brownish silt which shows a tilt towards east suggesting tectonic disturbances.

Late Stone Age tools were obtained at Pimpri from a gravel on the Dehivad nullah, a tributary of the Tapti. The collection comprises an irregular core, pen-knife blade, simple burins and flakes.

A few tools of the Late Acheulian complex were picked up at Burudkha. Middle Stone Age tools were found at Dahivad, Jaitpur Jatoda, Lagadvohal Pada, Pinjar Jhadi Pada, Raytel, Savalda and Tonda.

Late Stone Age tools were collected at Lagadvohal Pada, Mahunji Pada (pl. XI G), Panchamauli Pada and Varvhada.

Chalcolithic habitation sites were discovered at Amoda, Babhulda, Gidhada, Hingoni Budrukh (fig. 3), Untavad and Uparpind. The site at the last-named village is interesting in that the collection of antiquities from here comprised, besides microliths, a clay marble and potsherds of the Savalda black-on red ware, the burnished grey ware and a thick coarse painted red ware, with possible Harappan affinities represented in such forms as perforated jar, cylindrical vase, bowl and a fragmentary sherd of medium fabric painted in black on the inside with two symbols.

The other sites mentioned above yielded microliths, Savalda black-on-red ware, burnished grey ware and thick coarse wares.

Shri Sali in the course of his explorations in the District also made the following geomorphological observations in the examined parts of the Tapti basin.

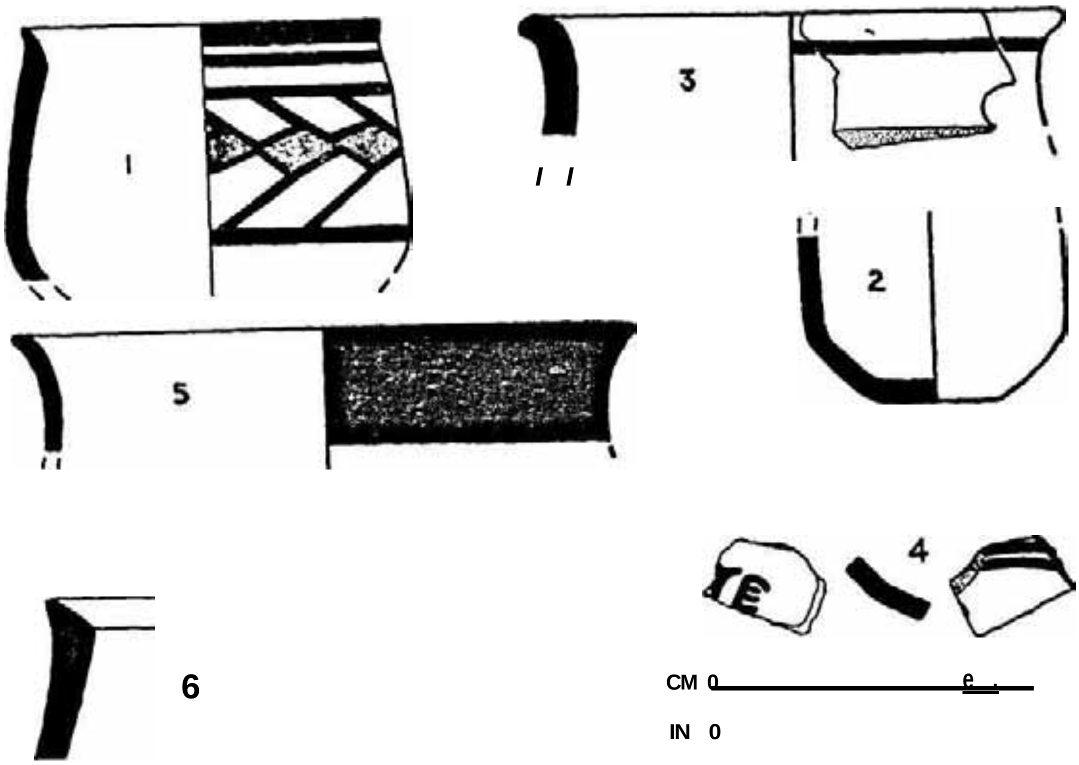


FIG. 3

The tilted lithologic blocks bounding the south tributaries of the Tapti, viz. the rivers Panjhra and the Buray and their tributaries, suggest that they occupy rift valleys.

An abrupt northerly and north-easterly course obtained by the initially east-ward flowing rivers Panjhra, Buray and Shivnad and the Pan or Gokun nullahs may be attributed to a fracture along a line joining Dhulia, Lonkheda and Ashta.

The knick-points observed at several places in the examined parts of the river and nullah valleys are marked by rapids, waterfalls and gorges resulted from the recession of waterfalls. Actual observations, coupled with a study of longitudinal profiles (gradient calculated at an interval of 15-24 m contour from the Survey of India topo sheets) of these rivers and nullahs, showed that there is some concordance in heights of these knick-points above Mean Sea Level. Thus, they lie at a height roughly between 2,200 ft (670-560 m) and 2050 ft (624-84 m), 1850 ft (563-88 m) and 1750 ft (563-4 m), and 1450 ft (441-96 m) and 1350 ft (41148 m) on the rivers Buray, Kan and Panjhra; 1000 ft (304-8 m) and 950 ft (289-56 m) on the rivers Buray, Panjhra, Amravati and Shivnad; 750 ft (228-6 m) and 700 ft (213-36 m) on the rivers Buray, Panjhra and Amravati and the Amravati or Bhad Nullah and the Sukar nullah; and 550 ft (167-64 m) and 500 ft (152-4 m) in the valleys of almost all the rivers and nullahs along the southern margin of the Tapti plains proper.

The area of waterfalls, lying between 1850 ft (563-88 m) and 1750 ft (533-4 m) above Mean Sea Level, at Mahunji Pada on the river Buray and at Malangaon Pada on the river Kan, shows excessive jointing or fracturing suggestive of faulting.

An evidence of seemingly a 'hanging valley' was observed in the area of Kaothe gorge, opposite Jirethal on the river Kan, laying at a height between 441-96 m and 426-92 m above Mean Sea Level along the line of which a tectonic disturbance appears to have taken place.

The lacustrine conditions suggested by the occurrence of massive deposits of laminar sands and resulting probably by the damming up of the river by a transversely running dyke near Jharala Pada on the river Shivnad, seem to have come to an end perhaps due to earth movements which appear to have occurred probably prior to the arrival of the Late Stone Age man on the scene as is indicated by the presence of Late Stone Age sites at Ojharda and Ashta near the edges of the gorge.

At Pechribari Pada after the deposition of the current-bedded sandy fine gravel, earth movements appear to have disturbed the course of an initially north-westerly flowing nullah causing its abrupt turn towards north-east and the cutting off of its original lower reaches from its middle reaches in this area. A displacement in the ends of a dyke hill in its gap was also noticed here.

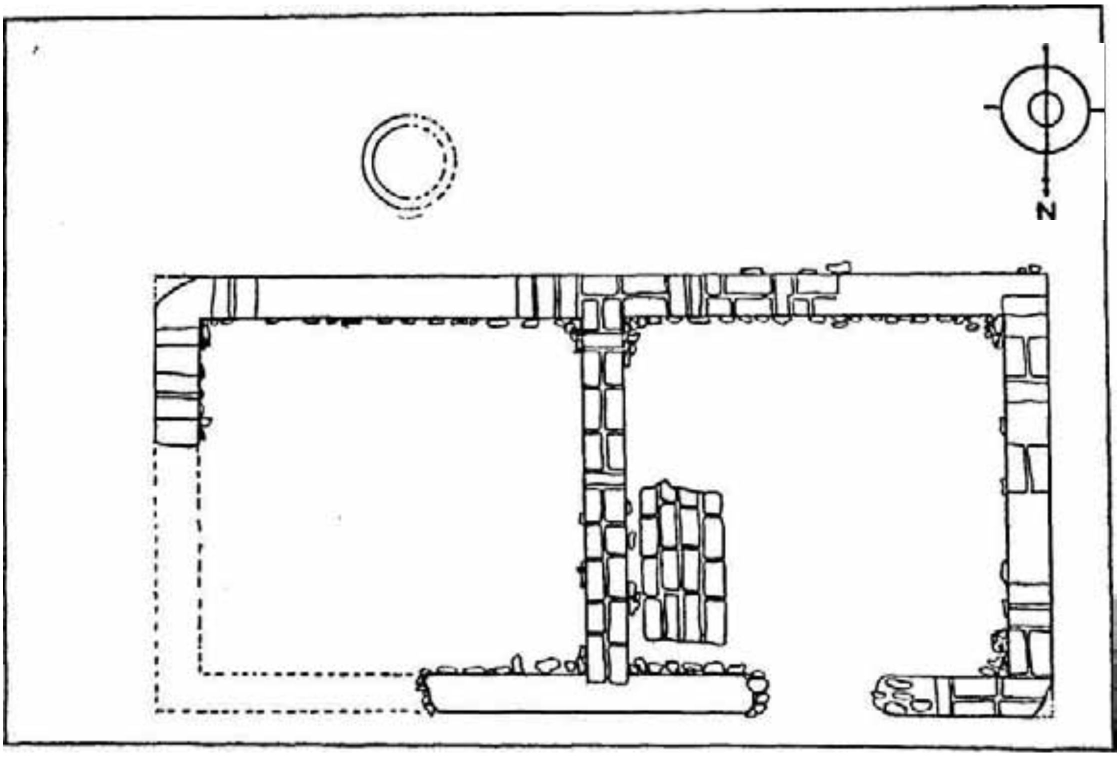
In many a sector of the valleys, deposits of older cycle (s) lie away from the present channels of the rivers or nullahs, the area between these deposits and the present channels being filled up with the deposit of the younger cycle (s) deposited during successive period (s) of aggradation, but, separated from each other by a period of erosion. Wherever observations were reasonably possible, e.g., at Amli, Bhandgaon and Dahivel on the river Kan, the deposits of the older cycle (s) seem to rest upon the rock surface lying at a higher level than that upon which rest the deposits of the younger cycle (s). Yet, it appears that, because the deposits of the younger cycle (s) seem to have reached the height of that of the older cycle (s) or even higher up, the valleys have assumed a form of a plain instead of having a terrace-like appearance. Lateral shifting of the streams due either to slow earth-movements or their lifting up by aggradation seem to be the cause of this phenomenon although perhaps the former appears to be the more plausible contributory factor in some of the examples.

35. EXPLORATION IN DISTRICTS KOLHAPUR AND RATNAGIRI.—Shri A. Sundara, a Research student of the Deccan College Post-Graduate and Research Institute, Poona, discovered megalithic sites with passage tombs at Ainapur Harali and Gadhinglaj in District Kolhapur and a new megalithic (?) cairn of laterite rubbles near Masavi, a hamlet of Poyere in District Ratnagiri.

36. EXCAVATION AT TER, DISTRICT OSMANABAD.—The Department of Archaeology, Government of Maharashtra, under Dr. Moreshwar G. Dikshit resumed excavation at Ter. The main objective of the dig was to examine the stratigraphic horizon of the objects in the collection of the local landlord Shri Ramalingappa Lamture. The excavation revealed three main periods of occupation. Period I showed that the earliest settlement on the site belonged perhaps to the Mauryan Period {*circa* 300-100 B.C.). It was brought to a close by a flood. Period II, with a number of sub-periods, was the most flourishing period in the occupation of the site and was assigned to *c.* 100 B.C. to A.D. 100. The penultimate phase of this period revealed traces of a large-scale fire which destroyed large portions of the houses. Period III belonged to the late Satavahana Period, A.D. 50-200, when Ter developed

contacts with Rome. Thereafter, the site remained abandoned till the medieval period. It was seen that Ter, identified with ancient Tagara, developed commercial contacts with the western world only after about A.D. 50 during the rule of Sri Satakarni. The main Roman (?) settlement lay beyond the present Terna river. Remains of a large house were uncovered. Amongst the numerous objects recovered were : double-moulded cult figurine of kaolin and terracotta ; terracotta figurines (pls. XIII B and XIV A); a number of lamps with nozzle-wicks (pls. XII B and XIV B), simulating Roman work; portions of votive tanks ; coins ; beads of semi-precious stones and glass ; and pieces of decorated shell bangles.

As a precautionary measure against floods, the walls of the houses were erected on strong pebble foundations (fig. 4). Brick-lined soak-pits (pl. XII A) were in vogue in the late Satavahana Period. The earlier soak-pits were invariably built of terracotta rings (pl. XIII A). A unique feature in the latter, ascribed to the Mauryan Period, was the wooden-frame in which the rings were fitted for stability.



TER-II-EXCAVATION

METER

FIG. 4

37. EXCAVATION AT PAUNAR. DISTRICT WARDHA.—The Department of Ancient History and Culture, University of Nagpur, excavated the ancient site of Paunar, believed to be the capital of the Vakatakas. The excavation was directed by Prof S. B. Deo, assisted by Dr M. K. Dhavalikar.

The excavation revealed four cultural periods:

Period I was evidenced by the occurrence of a thin black-and-red ware, highly burnished. One sherd bore traces of dull white painting. The shapes represented were bowls, dishes and conical bases. Associated with this was a mat red ware having paintings in black. These were displayed only on globular pots with some sort of a short beaked and horizontal wavy and straight lines, bands and latticed diamonds. The ware did not indicate any typological or technical affinity either with the Jorwe or the Malwa Ware. The other associated wares were the coarse red and micaceous red. Copper, iron and microliths were totally absent. Due to the restricted nature of the dig, no idea regarding the houses could be obtained.

Period IIA was characterized by the introduction of iron, the use of a thick black-and-red ware (typologically of the early historical period), terracotta figurines, beads of semiprecious stones and the technique of floor making, involving the ramming of brown and black clays. The painted pottery and the thin black-and-red ware were totally absent and were replaced by a variety of indifferently fired red wares.

Period II B seems to have been a period of transition as evidenced by the overlap between the Red Polished Ware and the black-and-red ware.

Period III witnessed the prosperity of Paunar. This period could be roughly assigned to late Satavahana and Vakataka times. The ceramic evidence comprised the black-and-red ware, the Red Polished Ware, the amphora, associated with beautifully-made beads of semi-precious stones, late Satavahana and Vishnukundin coins and a variety of stone plaques and fragmentary stone sculptures. The structures associated with this period included brick constructions with well-made foundations, ring-wells for soakage purposes and floorings made of rammed clay. The houses had tiled roofs. The tiles bore impressions of rice wheat husk.

At the end of Period III, the site seems to have been deserted only to be reoccupied in the early medieval period as attested by the find of Celadon Ware, the glazed ware and polychrome glass bangles.

MYSORE

38. EXPLORATION IN DISTRICT BELGAUM AND DHARWAR.- During the course of his explorations in north Mysore state, Shri A. Sundara of the Deccan College Post-Graduate and Research Institute, Poona, discovered megalithic sites with passage tombs at Badkundri, Daddi, Godgeri, Gudikyatara, Hidkal, Hunnur, Jinral, Nirvanhatti, Savalgi and Yarnal in Gokak and Hukkeri Talukas of District Belgaum. From some of the disturbed tombs at Hidkal and Nirvanhatti, pottery of the usual megalithic fabric and fragments of human bones were collected. An extensive ancient site, nearly 8 hectare in area, was noticed at Majti, in Hukkeri Taluka, District Belgaum.

Megalithic pottery was collected from ancient sites at Chaudiahdanapura in Ranebennur Taluk and from Galaganatha, Haveri Taluk, both in District Dharwar. A Few potsherds, neolithic grey ware of Brahmagiri fabric, were also picked up at the latter site.

Shri Sundara, while continuing exploration in Taluk Ron (1964-65, p.31) discovered neolithic-chalcolithic sites at Hole-Alur on the Malaprabha, already noted for the

occurrence of Early Stone Age tools, and at Belavanki (four different sites), Kowjageri and Basarkod. Grey ware sherds of Brahmagiri fabric were found on all these sites. At Hole-Alur were found a few parallel-sided blades, a crested-ridged flake, and at Belawanki a polished working edge of an axe. On the other sites were noticed a few parallel-sided blades and microliths, usually of chert.

Stray grey ware sherds of Brahmagiri fabric were picked up in the cultivated fields at Yavagal and Amargol. At Hadagali in Ron Taluk and at Datnahal in Navalgund Taluk were noticed red and grey wares of medieval period, some of them micacious. On an ancient site at Yadwad in Dharwar Taluk, was picked up a fine polished stone axe of pointed butt-end, ovoid in section. At Ron, a recently unearthed *virgal* was found to contain an inscription dated to Saka 898, *Svarasamvat-sara, Bhadrapada Suddha navami Adityavara* corresponding to 9 September A.D 997. (pl. XVA).

39. EXPLORATION IN DISTRICT GULBARGA.—In continuation of the previous work *(1965-66,* pp. 33-34), Shri K. Paddayya carried out further explorations in the Taluks of Shorapur, Shahpur and Jewargi in District Gulbarga. The results of this work are summarized below.

Open-air sites, yielding artifacts of Middle Stone Age were discovered at Devapur, Mallur and Tumkur. A vast majority of the tools were found to be made on flakes detached by the 'plain flaking and prepared core' techniques. The types included scrapers of various shapes, points and borers, to the total exclusion of heavy tools like discoids and chopping-tools. Chert was the chief material worked upon.

Microliths were collected from twenty-five sites: Bardevanhalli, Baswantpur, Bijaspur, Bilhar, Chingurhalli, Dwaranhalli, Hunsgi (1 and 2), Jewargi, Kannekolur, Khanapur, Konhalli, Kurihal, Mallur, Manganhal, Rajankollur, Rastapur, Sagar, Tumkur, Vibhuti-halli (1 and 2), Wadgira, Yayal-Buzurg and Yerkanhal (1 and 2). No habitation deposit was encountered at any of these sites. The tools were mostly made on parallel-sided blades struck off from fluted cores. Chert is again the chief raw-material utilized. The tool-types comprised trimmed blades, blades with blunted back, serrated blades, lunates, trapezes, triangles, points, borers, scrapers and burins. From Yerkanhal and Rajankollur were also collected patinated basalt flakes and flake-blades resembling the ones reported from Phase I at Sanganakallu. Another noteworthy find was a fragmentary mace-head from Hunsgi. It is rectangular in shape and is made of micaceous schist.

Neolithic habitation sites were discovered at Bijaspur, Birnur, Budnal, Kupi, Wadgiri and Yerkanhal. The antiquities from these sites include both pottery and stone tools. The pottery as usual is of blotchy grey fabric. A few sherds of black-painted red ware, resembling those reported from Piklihal and other neolithic sites, were also found. At Kannekolur, small quantities of Jorwe Ware were also noticed. Simple and carinated bowls are the only shapes available.

Two more ash-mounds were brought to light: one at Mallur (in addition to the one reported earlier by Dr Mahadevan) and the other at Tirth. The antiquities recovered on and around these mounds are similar to those of the habitation sites mentioned above.

The ash-mound at Kodekal was scraped to a depth of about 3-5 m. In the main, 7 layers, numbered from top to bottom, were identified. Layer 1, about 0-45 m in thickness, was composed of scoriaceous slag of varying colours of grey, black and green. It was devoid of any antiquities. Layer 2 was about 0-45 m thick and consisted of variegated dark brownish soil. It yielded a few potsherds and chert blades. Layer 3 showed a thickness of about 1-2 m and was similar in composition to that of layer 1. The antiquities were few and

included animal bones, fragmentary potsherds and chert blades. Layer 4, about 1-05 m in thickness, was composed of compact and variegated dark brownish soil. Huge quantities of pottery, blade tools of chert, animal bones and specks of charcoal were encountered throughout this layer. Layer 5 was a thin, discontinuous band of fine *murum.* Layer 6 was about 0-30 m in thickness, and was composed of dark greyish soil. Pottery, blade tools and animal bones were found in this layer. The most interesting feature of this layer was the presence of a series of grantic stones. Layer 7 was the natural soil consisting of whitish *murum.*

40. EXPLORATION AT SANNATHI, DISTRICT GULBARGA.—In the course of exploration in the District, the Department of Archaeology, Government of Mysore, brought to light a Buddhist site at Sannathi, going back to a period between the first century B.C. to third century A.D. The work was carried out under the direction of Dr M. Seshadhri. The exploration revealed a stupa-building which, but for its circular basement has been completely eroded by the river. The area all along the river bank, from the village to the *stupa-mound,* can be seen studded with quite a large number of broken sculptured pieces belonging to the Buddhist *stupa.* Some of these sculptured stones were found used in the small temple existing on the site. Among those sculptures may be mentioned a panel having a galloping buffalo and winged horse, two inscribed *ayaka* pillars (pl. XVII B), a slab with the throne, the foot-prints and the Bodhi tree. An interesting panel of the nativity of the Buddha (pl. XV B) was found within a later temple of Chandralamba. Prince Siddartha seated with ladies in the garden (pl. XVI A) is the subject matter of another relief. The relics are typically Satavahana ranging in date from the first century B.C. to the third century A.D., and resemble mostly those from the Buddhist sites at Amaravati, Bhattiprolu, and Nagarjunakonda. In addition to the sculptures and inscriptions, other surface finds included a piece of Rouletted Ware, Satavahana tile-pieces, crystal and carnelian beads and shell bangles (pl. XVI B).

41. EXPLORATION IN DISTRICT MYSORE.—The Director of Archaeology and Museums, Mysore, reported the discovery of a Hoyasala temple at Kallambalu, built during the reign of Viraballala II. It is noted for the sculptures placed in the *navaranga* of the temple, among which may be mentioned the Saptamatrikas, Surya, Mahishasuramardini, Sarasvati, Brahma, Shanmukha, Bhairavi (pl. XVII A), etc.

ORISSA

42. EXPLORATION IN DISTRICT KORAPUT.—During the year under review, the temple of Nilakanthesvara (pi. XVIII A) and Mallikesvara (pl. XVIII B), standing on Jogamunda hill in the Gunpur block of the District were surveyed.

The temple of Nilakanthesvara standing on the top of the western hillock is a small plain, square-sized *pidha deul,* 3-35 m in height, its pyramidal portion having two tiers with a proportionately big *amalaka* stone on the top. The *bada* or the walls of the temple are built of single blocks of sandstone. The temple contains an inscription which may tentatively be assigned to the seventh century A.D. From the point of architecture, it resembles the Sikharchandi temple of Patia, 8 km to the north of Bhubaneswar, where the deity Mahishasurmardini, called Chandi, is worshipped in small plain *pidha deul,* on the *sikhara* or top of a hill.

The temple of Mallikesvara, standing on the eastern hillock, looks like the Parsura-meswar temple of Bhubaneswar from a distance. It consists of a *vimana* or main temple and

a *jagamohana* or antechamber. The *vimana* is a *pancharatha* temple, square in shape, each side measuring 4-26 m having a height of 8-32 m from the ground level around the hill up to the top of the *amalaka.* The original *kalasa* still remains in its proper position.

There are now no images in this temple except the three *parsvadevatas,* which still exist intact in their original niches. But a beautifully carved ten-armed Mahishamardini Durga was found installed in the northern side instead of Parvati generally found in the Siva temples of Orissa. *The jagamohana* of the temple has totally collapsed of which the four monolithic pillars, the portions of the roof resting over them and the lower portions of the northern and southern walls only remain at present. The eastern wall has totally gone out of existence.

PUNJAB

43. EXPLORATION IN DISTRICT AMRITSAR.—In the course of his exploration, Shri Lalchand Singh of the North-western Circle of the Survey discovered Painted Grey Ware site at Chhichhariwal and Northern Black Polished Ware at Chabal Khurd in Tahsil Taran-taran.

44. EXPLORATION IN DISTRICT PATIALA.—Shri Suraj Bhan of the Department of Ancient History and Culture, University of Panjab, Chandigarh, explored Harappan sites at Dharmheri, Gheora and Sasi along the western bank of Ghaggar nadi in District Patiala. At Gheora, were also picked up sherds of the Painted Grey Ware and early historic pottery.

RAJASTHAN

45. EXPLORATION IN DISTRICTS BHARATPUR AND CHITORGARH.—The Director, Depart ment of Archaeology and Museums during the course of an exploration in the District brought to light a temple of the Gurjara Pratihara style at Bhawanipura, some 22 km on Ajmer-Jaipur National Highway. This temple is of the eighth-ninth century A.D. Besides, he also located, in the Bharatpur area, a mound yielding the Painted Grey Ware at Dehra, about 15 km west of Bharatpur and another site about 18 km east of Bharatpur, near Chiksana, yielding historical period finds.

In the District Chitorgarh he found a mound yielding the black-and-red ware at Rashmi.

46. EXCAVATION AT NOH, DISTRICT BHARATPUR.—In continuation of the last three years' work *(1965-66*, p. 38) the Department of Archaeology and Museums, Government of Rajasthan resumed excavation at Noh. The main objective of the present season's work was to determine the cultural content of the post P.G.W. settlements at the site, with special reference to the position of the N.B.P. Ware. With this end in view, a trench measuring 7 x 5 m was taken up on the southern slope of the mound.

This year's excavation established the existence of two distinct periods (IV and V) in the post P.G.W. levels. Period IV is assignable to the early sixth-third century B.C. while Period V to the early second century B.C. late third century A.D.

Period IV is marked by the emergence of the N.B.P. Ware and its associated finds. The N.B.P. Ware at Noh has a strikingly polished surface, having an almost lustrous metallic finish, ranging in colour from coal black through steel grey or silver grey to the golden. In this Period, both P.G. Ware as well as plain grey ware continued to be

used. Stratigraphically, no evidence of a gap between this phase and the preceding P.G.W. phase was recorded. The other ceramic industry was a red ware. The use of iron was known. Other finds from the Period include cast coins, copper objects and terracotta figurines, both human and animal, the most important being an elephant with incisions all over the body.

Of the structural remains of the Period, three phases were identified. The size of the mud-bricks was 40 X 20 X 6 cm.

Period V was characterized by the pottery typical of the Sunga and Kushana Periods. It is treated mostly with a wash or a slip. Common shapes were bowls, lids and lipped bowls with small-spouted channels. Sherds with *triratna* and *svastika* symbols, resembling the specimens from Hastinapura Period IV, were also obtained. Other noteworthy finds comprised: a number of terracotta figurines, both male and female, using elaborate coiffeurs and jewellery; animal figurines, like horse and bull in traditional style; one seal, inscribed in Brahmi characters; copper coins, dices, flesh-rubbers, antimony rods; bangles of shell, glass and terracotta; potter's stamp, and beads of terracotta, stone, etc.

47. EXCAVATION AT KALIBANGAN, DISTRICT GANGANAGAR.—The Exploration Wing of the Survey, working under the direction of Shri B. B. Lai and Shri B. K. Thapar, resumed (*1965-66,* pp. 38-41) excavation at Kalibangan for the seventh season. Assistance in the work was received from Sarvashri J. S. Nigam, J. P. Joshi, N. C. Ghosh and B. M. Pande. Besides providing training in field archaeology to the students of the School of Archaeology, this season's work had five principal objectives to realize, of which three related to work at the citadel-mound (KLB-1) and two to that at the city-mound (KLB-2); firstly, to recover the outline of the pre-Harappan (Period I) and Harappan (Period II) fortifications in the northern half of the citadel-mound (KLB-1), particularly on the eastern and western sides, including the corner angles; secondly, to ascertain the nature of structures in the same part of the citadel; thirdly, to recover the complete outline-plan of one of mud-brick platforms (Period II) in the southern half of the citadel (KLB-1); fourthly, to re-ascertain the existence or otherwise of a fortification-wall around the city-mound (KLB-2); and fifthly, to expose further lengths of the thoroughfares in the city-mound (KLB-2) for determining the original layout of the Harappan town (Period II). For the first objective, fresh trenches were laid along the supposed alignment of the fortifications on the eastern, northen and western sides; for the second, an area 40 x 40 m was laid out in the south-eastern part of the northern half of the citadel; for the third, the existing trenches along the southern face of the already exposed platform were extended and fresh ones laid out further west near the anticipated south-western angle; for the fourth, fresh trenches were laid out along the eastern and western margins of KLB-2, and for the fifth, fresh trenches were laid out along the alignment of the already-known thoroughfares.

Last year's work at the citadel-mound (KLB-1) had already indicated the existence of the fortification-wall on the northern side of the northern half which was thus shown to be similarly enclosed as the southern half. During this season, the entire length of the fortification-wall on the northern side, including the north-western corner bastion (pl. XIX A and B), was exposed, the details of the north-eastern corner, being insufficiently preserved, remaining undetermined. The wall was found to run parallel to the partition-wall up to a length of about 85 m from the eastern end thereafte showed a re-entrant angle within which was located an unpretentious entrance. At the turning, this re-entrant was further marked by a salient which, though incomplete in plan, projected nearly 6 m from the main wall. The north-western corner tower showed two projections on the northern side.

On the eastern side, sufficient stretches of the fortification-wall were traced at more than two places to establish its width and general alignment. At some places, the wall was found to be built on a fairly deep foundation, necessitated perhaps by the uneven and riven surface of the abandoned pre-Harappan settlement. The width of the wall, which as elsewhere, showed two principal structural phases ranged between 4 and 5 m.

Excavation in the south-eastern part of the northern half of the citadel revealed regular house-blocks (pl. XX) on either side of a 2-m wide street which, running obliquely from the eastern of the two centrally located salients, seems to extend to the entrance in the re-entrant angle of the fortification-wall on the river (northern) side. Due to the restricted extent of the dig complete plan of the houses, much less of each structural phase, could not be recovered. In one of the houses was found a storage jar, bearing an inscription in the Harappan characters (pl. XXII A). The contents of the pot, however, do not indicate any special function of the pot. Although there is nothing at present to distinguish these houses from those of the 'Lower City' it was observed that sufficient open space was left between these houses and the fortification-wall, making them appear more insular than those of the lower city. The former were built of mud-bricks of the standard size (7½ X 15 X 30 cm) used everywhere both in the citadel and the lower city.

The mud-brick platform in the north-eastern part of the southern half of the citadel, of which the width was determined last year, was on further excavation found to be 60 m long, the longer axis being along east-west. Its three angles alone could be recovered, the fourth, viz., north-western, having been eroded away. The platform showed more than two structural phases (pl. XXI). The width of the passage, running between this platform and the other lying to the south, was found to be 10 m. In its earliest phase, part of the passage was seen to be paved with mud-bricks (size 40x20x 10 cm) (pl. XXI). On the extant top of the platform and obviously belonging to the upper levels of occupation, were found: (i) in the eastern half, a brick-lined rectangular pit containing bones of animals (pl. XXIIB) particularly bovine, deer, etc.; and (ii) in the western half, a well, associated with a 'fire altar'. Of these, the well showed novel structural features: in the foundation, the ring-wall of the well (pl. XXIII), constructed of wedge-shaped baked bricks, was found to be supported on four sides by (normal type) radial walls of single-brick course. The well seems to have suffered heavily at the hands of brick robbers.

At the city-mound (K.LB-2), excavation at selected places, along the eastern and western margins, indicated the existence of over 3-m wide mud-brick wall apparently enclosing the settlement. On the western side, the fortification-wall was less clearly defined in the excavated trench. A spread of mud-bricks (size: 40 X 20 X 10 cm) in a regular alignment did, however, indicate the presence of a fortification-wall, for bricks of this size have not been found to be used in residential structures. On the eastern side, where the level of the surrounding plain seems to have been lower, an additional ledge was seen at the foot of the fortification-wall (pl. XXIV). It is as yet not certain whether this feature continued throughout the length of the eastern side or was confined only to certain areas. On this side, the fortification-wall was exposed to a length of over 30 m in the middle portion. It was also found that the fortification-wall on this side ran parallel to that on the west side on the one hand and the north-south running citadel walls on the other, thus indicating a single conception of the city layout. Both on the eastern as also on the western side, the house walls almost reached up to the fortification-wall which was built of mud-bricks of the size of 40x20x 10 cm in the lower courses and 30 X 15 X 7-5 cm in the upper.

As a result of the area digging in the lower city, more house-plans were exposed, the general features like the rows of rooms around a courtyard remaining the same.

The already exposed four north-south running thoroughfares were traced further in the northern part of the mound. During this process indication of an east-west running street, crossing through all the four north-south running thoroughfares, was duly noticed. How this street behaves from the eastern end to the western still remains to be ascertained; its existence being confirmed only at the street crossing. This is the third of the east-west running streets which are located on an average of 72 m from each other. The grid-plan of the city thus became clearly noticeable.

The finds obtained from the excavation, both at the citadel-and the city-mounds, were typically Harappan, no pre-Harappan levels having been excavated during this field season.

UTTAR PRADESH

48. EXPLORATION IN DISTRICTS ALIGARH, BULANDSHAHR, ETAH AND MEERUT.—The Department of History, Aligarh Muslim University, under Shri R. G. Gaur, assisted by Shri Mohd. Haneef Hashmi, undertook explorations in the above districts. During the operation several sites of importance were located, including three single culture sites of the Ochre Colour Pottery : Lai Qila, Kazempur and Kharkhoda (fig. 5). Among these, Morthal, probably has a deposit of the Qchre Colour Pottery underlyjng_that_Containing the Painted Grey Ware. The explored sites with their associated cultural assemblage are listed below:

(OCP=Ochre Colour Pottery; PGW=Painted Grey Ware; GW=Grey Ware; BS=Black-slipped ware; BR=Black and red ware; R=Red Ware of the Sunga Kushana Period; and M=Medieval Ware)

District	*Tahsil*	*Site*	*Associated Ware*
Aligarh	Hathras HQ.	Hathras Fort	PGW, BS, BR, R, M
	3J	Maho	PGW, BS, R, M
••	Iglas	Mahawa	BS, M
3)	Kol	Madrak	GW
»		Morthal	OCP(?), PGW, BR, BS,
			BS, R, M
33	Sikandra Rao	Saigarh	PGW, BS, R, M
33	99	Nagaria-Khera	M
93	93	Vijai Garh	Crude PGW, BS, M
Bulandshahr	Anupshahr	Lai Qila	OCP
••	Khurja	Barner Sharif	PGW, BR, BS, R, M
	Khurja	Dhaurau	PGW, BR, R, M
9)	Sikandrabad	Kot-Khera	PGW, BS, R, M
Etah	Jalesar HQ.	Jalesar Fort	PGW, R, M
Meerut	Ghaziabad	Kazimpur	OCP
••	Hapur	Atrara	**PGW,** R
,,	"	Kakraut	R, M
			M
99	33	Gangheri	OCP
	"	Khar khoda	R, M
9>	"	Naval-Khera	PGW, BS, R, M
"	"	Sarawa	

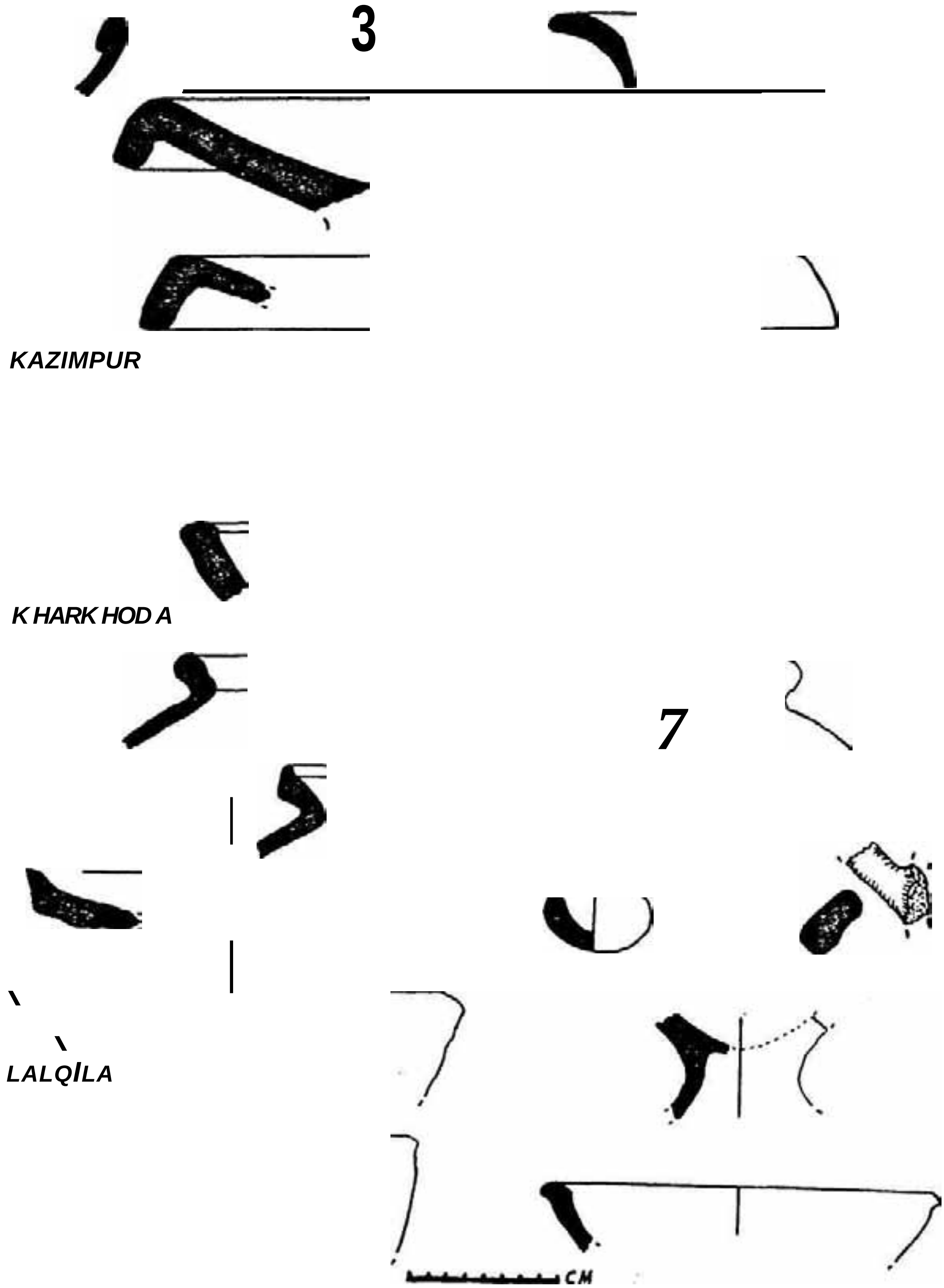


FIG. 5 34

49. EXPLORATION IN DISTRICTS ALLAHABAD, MIRZAPUR AND SHAHJAHANPUR.—The Institute of Archaeology, University of Allahabad, under the direction of Prof G. R. Sharma, assisted by Sarvashri V. D. Misra and Brij Behari, undertook a systematic exploration in the valleys of the rivers Tons, Belan, Seoti and their affluents like Lapari, Lohanda, Jogiya, Nadoh, Balluhawa and Bharuhawa nullahs. The exploration which covered an area of 103-6 sq.km brought to light sites of the following assemblages: (i) Early, Middle and Late Stone Ages (pls. XXVI-XXVIII); (ii) microliths associated with blades and cores manufactured on the famous crested ridge technique (pl. XXIX); (iii) rock-shelters with paintings and (iv) megalithic monuments.

Between the villages Lonamati in the north-east and Deoghat in the south-west, as many as six localities yielding tools of the Early, Middle and Late Stone Ages were located. The two nullahs joining the Belan near the village Galdahawa also yielded tools of the aforesaid categories. Between the confluence of the Seoti and Belan in the west and village Sivapur in the east, were located as many as seven more sites on the river Seoti. From the banks of the Nadoha and Lahanda nullahs were also obtained lithic implements ranging from the Early Stone Age to the Late Stone Age. Besides these localities, the Balu-hawa nullah, near the village Natupur, Kachhahawa nullah, near Chopani-Mando and the old Belan also yielded tools of the Middle and Late Stone Ages. Two terraces of the Belan were noticed near the village Galdahawa of which Terrace 1 yielded tools of the Early and Middle Stone Ages.

A cliff-section, 18-28 m deep, showed the following sequence of deposits, from bottom |upwards (fig. 6 and pl. XXV). A noteworthy find from the section (in Gravel II) was I that of a fossil (pl. XXX).

Layer	*Nature of Deposit*	*Associated Industry*	*Material*	*Fossils*
(X)	Layer of decomposed rocks resting on the bed rock; 1-52 m.	Non -implementiferous.		
(IX)	Cemented Gravel I, composed of big stone blocks of different sizes, *kankar* nodules (calcium carbonate) and lateritic nodules; 1-21 m.	pebble tools, Abbevillan, Acheuliean handaxes, cleavers and scrappers	Quartzite (100%)	1?
(VIII)	Silt deposit, composed (VII) of *kankar* nodules (calcium carbonate) and clay; 3-04 m. Cemented Gravel II, Layer C, composed of stone pebbles of smaller size, calcium carbonate, limes and small lateritic nodules and small block of stones. As compared to cemented gravel I it is less cemented; 2-74 m.	Non-implementiferous. Transitional stage bet -ween Early and Middle Stone Ages, tools mainly on fakes, cleaver (10%) and scraper (90%); secondary working present		

SCHEMATIC SECTION ON THE BELAN

SHOWING THE DEVELOPMENT OF LITHIC INDUSTRIES FROM EARLY STONE AGE TO THE LATE STONE AGE

GEOMETRIC MICROLITHS ASSOCIATED WITH POTTERY

GEOMETRIC MICROLITHS ASSOCIATED WITH POTTERY

UPPER PALAEaiTHIC BLADE INDUSTRY 8 NON-GEOMETRIC MICROLITHS

UNASSOCIATED WITH POTTERY

OS (3) CEMENTED GRAVEL HI-UPPER MLAEOLITHIC BLADE INDUSTRY

en

TOOLS OF MIDDLE STONE AGE A UPPER FALAEOLJTHIC BLADE INDUSTRY

© TOOLS OF MIDDLE STONE AGE, MOSTLY CHERT

®A TOOLS OF MIDDLE STONE AGE-CHERTY MATERIAL-SMALLER SIZE -

_ 3 TOOLS OF MIDDLE STONE AGE, CHERT * QUARTZITE

(7)C TRANSITIONAL STAGE-BETWEEN EARLY A MIDDLE STONE AGES-QUARTZITE

(B) NON-IMPLEMENTIFEROUS

® PEBBLE TOOLS ABBEVILLIAN-ACHEULIAN HAND AXES,CLEAVERS,ETC.

NON- IMPLEMEffI IFEROUS

BED ROCK

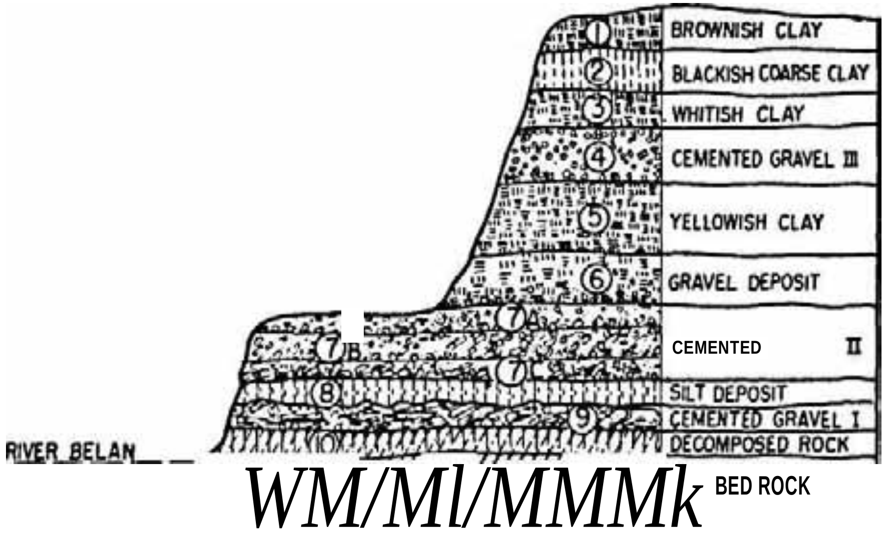


FIG. 6

o

I

Layer	Nature of Deposit	Associated Industry	Material	Fossils
	Cemented Gravel II, Layer B. Composition same as of Layer C of Cemented Gravel II.	Tools of Middle Stone Age, flake-scraper and blade tradition	Quartzite (57%) Chert (43%)	*Elephas* and *Bos namadicus*
	Cemented Gravel II, Layer A, Composition same as of Layers C and B of Cemented Gravel II; 1-26 m	Tools of Middle Stone Age, but smaller in size	Quartzite (20%) Chert (80%)	
(VI)	The Gravel deposit composed of lime carbonate, lateritic nodules, and small stone chips	Tools of Middle Palaeolithic Age, scrapers and blades	Mostly Chert	2
(V)	Yellowish silt composed of lime carbonate, lateritic nodules and small stone chips; 1.52 m	Tools of the Middle Stone Age (scrapers) and Upper Palaeolithic blade industry	Chert and other finer materials 94% and Quartzite 6%	
(IV)	Cemented Gravel III, composed of small rolled stone chips, 1.82 m	Upper Palaeolithic blade industry; fluted cores also	Chert and Fine grained stone	
(III)	Whitish silt composed of calcium carbonate and small stone chips.	Upper Palaeolithic blade industry and non-geometric microliths un-associated with pottery;	Chert and other fine-grained stones	
(II)	Blackish coarse mottled clay composed of small *kankar* nodules and stone chips	geometric microliths associated with pottery	Chert and other fine-grained stones	
(I)	Brownish clay composed of lateritic nodules, calcium carbonate and small stone chips	-do-	-do-	

These discoveries have added considerably to our knowledge relating to (i) transition from the Early Stone Age to the Middle and (ii) from the Middle Stone Age to the Late through the Upper Palaeolithic. The latter has been studied for the first time in India in proper geological context. A similar evidence of transition from the Upper Palaeolithic to the Mesolithic is also indicated.

From Jamshot, a famous site of early medieval temples, Dilwakalan and Pawari on the bank of the Lapari, a tributary of Tons, Pawari and Amilia, microliths, consisting of blades (parallel-sided and blunted backs), flakes and cores were obtained. The implements were fashioned on chert and chalcedony. The site of Pawari also yielded a fossil bone.

A number of megalithic monuments were located to the north of village Daiya on the right bank of the Lohanda nullah, a tributary of the Seoti, at a distance of about

72.74 km from Allahabad in south-easterly direction. Among the tomb types, cairn-circles and cists within cairn-circles, were noticed. Megalithic monuments and habitation sites were also located near village Bhatwar on the bank of the Seoti at a distance of 77-24 km from Allahabad in the south-easterly direction. The main tomb-type represented at the site is that of the cist though the cairn-circles were not wanting. A megalithic habitation site was located near village Imilia on the Gurma at a distance of about 77-24 km from Allahabad in the south-easterly direction. The surface pottery obtained from the site includes a thick black and grey ware almost similar to that found at the previously excavated site of Kotia.

50. EXCAVATION AT CHOPANI MANDO, DISTRICT ALLAHABAD.—With a view to ascertaining the nature of development of the microlithic industry at the foot of the Kaimur, and to obtaining a link, if any, between the development of the same industry on the Kaimur, as revealed by the excavations of Morahana and Lekhahia, two small trenches, CPN-A1 and CPN-B1, measuring 3-05 X 1-52 m each, were laid out on the previously explored site of Chopani-Mando situated on the left bank of the old Belan in Meza sub division, 69 km in the south-easterly direction from Allahabad. The excavation was conducted by Sarvashri B. B. Misra and V. D. Misra of the Department of Ancient History Culture and Archaeology, University of Allahabad under the personal supervision of Prof G. R. Sharma. The excavation revealed that the nature of the development of the microlithic industry, both on and at the foot of Kaimur, was almost the same.

The habitational deposit of 1-82 m, resting on the bed-rock, was divisible into ten layers which could be grouped in three different geological formations observed on the banks of Belan and Seoti at several places. From layers 10, 9 and 8 were obtained pre-pottery non-geometric microliths as also a few Upper Palaeolithic-like broad blades. Among the microlithic tool-types, mention may be made of blades (both parallel-sided and blunted back), points, lunates a few scrapers and a large number of flakes and cores, mostly fashioned out of cherty material.

Layer 7 represented the next stage in the development of the microlithic industry. From this layer were obtained geometric microliths (only triangle), non-geometric microliths and pot-sherds. The wares represented in this layer consist of an ill-fired ochre or-drab coloured pottery. As the excavated sherds are small and worn out, no shape could be recognized. On one sherd, incised decoration was also noticed.

From layers 6 to 1 were obtained non-geometric and geometric microliths associated with pottery of the above mentioned nature. Among the non-geometric tool-types mention may be made of blades (both parallel-sided and blunted back), points, scrapers, lunates, borers and a few doubtful pieces of burins. It was seen that triangles were introduced earlier than the trapezes. The triangle was introduced from layer 7 and was in use up to layer 4 while trapezes was introduced in layer 6 and continued up to layer 1.

As regards pottery, it can be grouped into two fabrics, light pink and drab. As the surface of the sherds is generally worn out, it is very difficult to say anything about the method of manufacture (hand-or wheel-made) and the nature of surface-treatment. However, some of the pieces of both the groups were found to bear incisions or corrugation-marks consisting of parallel, horizontal, vertical or oblique lines or dots.

51. EXCAVATION AT KAUSAMBI, DISTRICT ALLAHABAD.—The excavation at Kausambi was resumed *(1963-64,* p. 40) in the southern part of the Palace Area by Shri D. Mandal of the Department of Ancient History, Culture and Archaeology, University of

Allahabad, under the personal supervision of Prof G. R. Sharma. The main objective of this season's work was to determine the relationship of the tower on the Jamuna with the palace. One of the marked features of the tower in question is its return wall extending towards north-westerly direction. The excavation exposed the western edge of the return-wall mentioned above to a length of 16 m and to a depth of 68 cm. The wall was found to be made of bricks with occasional use of stone. A slight change in its orientation was observed at a distance of about 13 m from its joint with the tower. It takes a turn of 168° towards further west.

Another significant feature of the above return wall was the discovery of a subsidiary brick wall running south-north at a distance of 1-75 m towards east from the western edge of the return wall. Only the western edge of the subsidiary wall was laid bare. It was exposed to a length of 12-3 m and to a depth of 41 cm. Its bottom-most course was found resting upon the available top level of the return wall. It is significant to observe that the edge of the subsidiary wall ran parallel to the edge of the return wall. Though at the present state of our knowledge it is difficult to say anything definitely regarding the nature of the complex it forms, the possibility of its being an offset in the main return wall, however, may not be completely ruled out.

On account of the disturbances caused by the flood in the area and the paucity of archaeological material obtained, no definite conclusion can be hazarded about the date of this structure. However, the pottery, collected from debris of the collapsed structure, includes sherds of degenerate Northern Black Polished Ware and its associated red ware.

52. EXPLORATION IN DISTRICT JAUNPUR.—The Sanskrit University, Varanasi, under the direction of Shri R. B. Narain, assisted by Sarvashri P. N. Awasthi and R. R. Pal undertook an exploration in the District. An area of nearly 129 sq. km was surveyed around Masaon. As a result of the exploration, the following important sites were brought to light:

(i) Mahal: located about 10 km east of Jafarabad railway station on the Varanasi-Jaunpore section of the North-Eastern Railway. The ancient site stands on the south bank of river Gomati and yielded sherds of fine grey, black slipped, N.B.P. and red wares.

(ii) Naipora: located nearly 9 km south of Muftiganj Railway station on Jaunpore-Aurihar section of the North-Eastern Railway. The site stands on the northern bank of the river Gomati, and yielded sherds of black-slipped, N.B.P. and the red wares.

(iii) Naldeo Kuldeo: located 647 km south of Muftiganj, a railway station on Jaunpore-Aurihar section of the North-Eastern Railway. The height of the mound is nearly 7 to 8 metres from the surrounding level. Major portion of the mound is partly eroded and partly damaged. The site yielded sherds of black-slipped, fine grey and red wares. Portions of ring-well and baked brick structures were also noticed from the disturbed section and rain gullies.

(iv) Kerakat: located near the modern town Kerakat on the Jaunpore-Aurihar Railway line of the North-Eastern Railway. There are two mounds, quite adjacent to each other. The average height of the mounds is nearly l l m from the surrounding level. The site yielded sherds of black-slipped and red wares.

(v) Mahadeo Raja Ka Kila: located nearly 3 km west of Dobhi on the Jaunpore-Aurihar section of the North-Eastern Railway. The site is nearly 12 m high from the surrounding plains. It stands on the northern bank of the river Gomati and yielded sherds of black-slipped, N.B.P., grey and red wares. Among noteworthy finds mention may be made of one microlithic core, glass bangle pieces and terracotta disc.

(vi) Taraon: located nearly 6 km north-east of Dudhoura Railway Station, on the

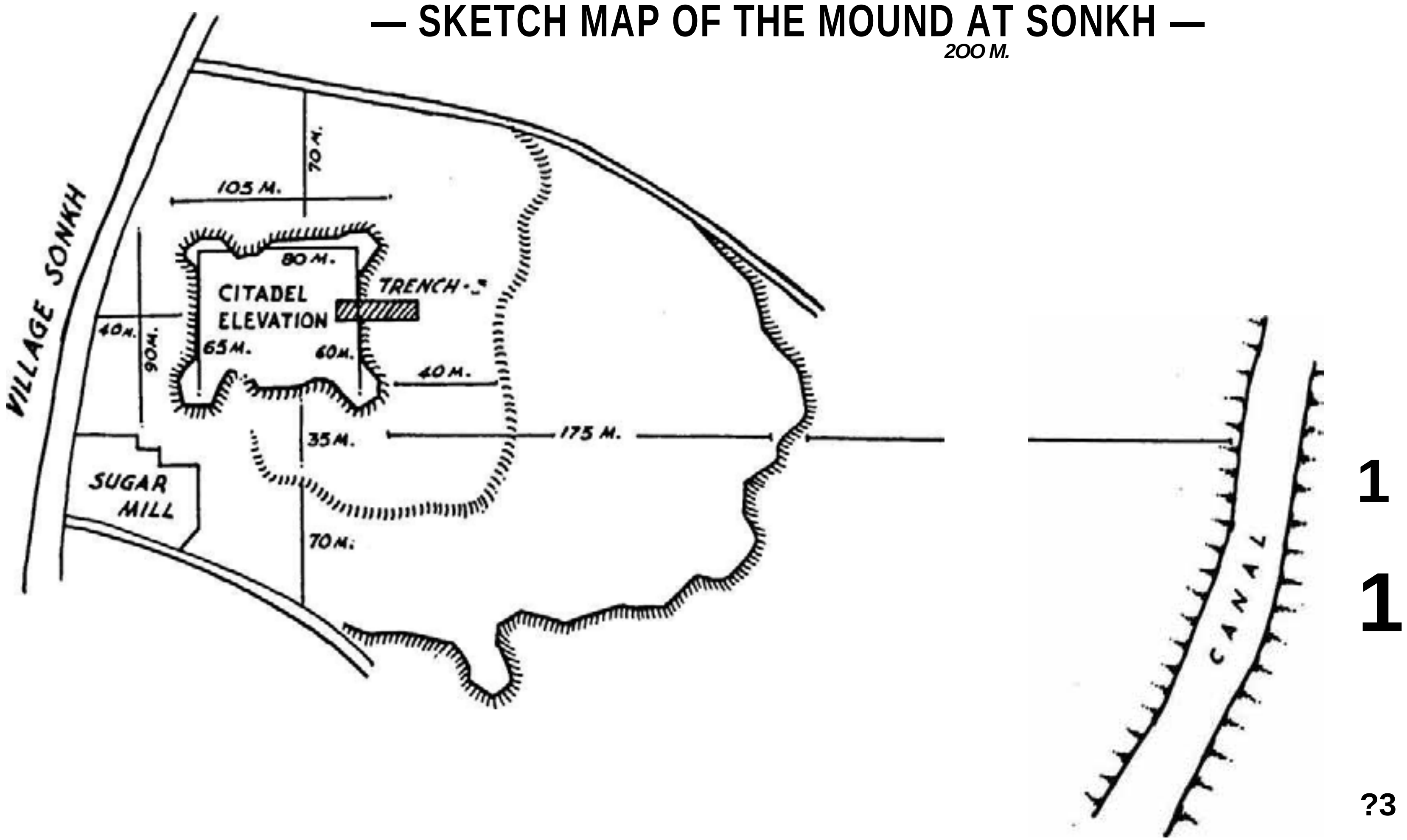

— SKETCH MAP OF THE MOUND AT SONKH —
200 M.
VILLAGE SONKH
105 M.
70 M.
80 M.
CITADEL
ELEVATION
TRENCH-3
40 M.
90 M.
65 M.
60 M.
40 M.
35 M.
175 M.
SUGAR
MILL
70 M.
CANAL
1
1
?3

FIG. 7

Jaunpore-Aurihar Railway line. The height of the mound is nearly 6 to 7 metres from the surrounding plain and yielded sherds of black-slipped, fine grey and Muslim Glazed Ware.

53. EXCAVATION AT SONKH, DISTRICT MATHURA.—Prof H. Haertel of the Berlin Museum of Indian Art, assisted by Dr A von Muller and Sarvashri M. Zimmermann and G. Kreisel, undertook excavation at Sonkh, some 30 km southwest of Mathura city. The mound is situated directly north of the village and extends over an area of 300-250 m. It consists of a three-fold level, the highest being a citadel elevation (fig. 7), rising to a height of 13.68 m above the field-level. The primary objective of the excavation was to confirm the archaeological importance, if any, of the ancient site and to obtain the cultural

Eastern Profile of Trench! -Sonkh *V 66-67*

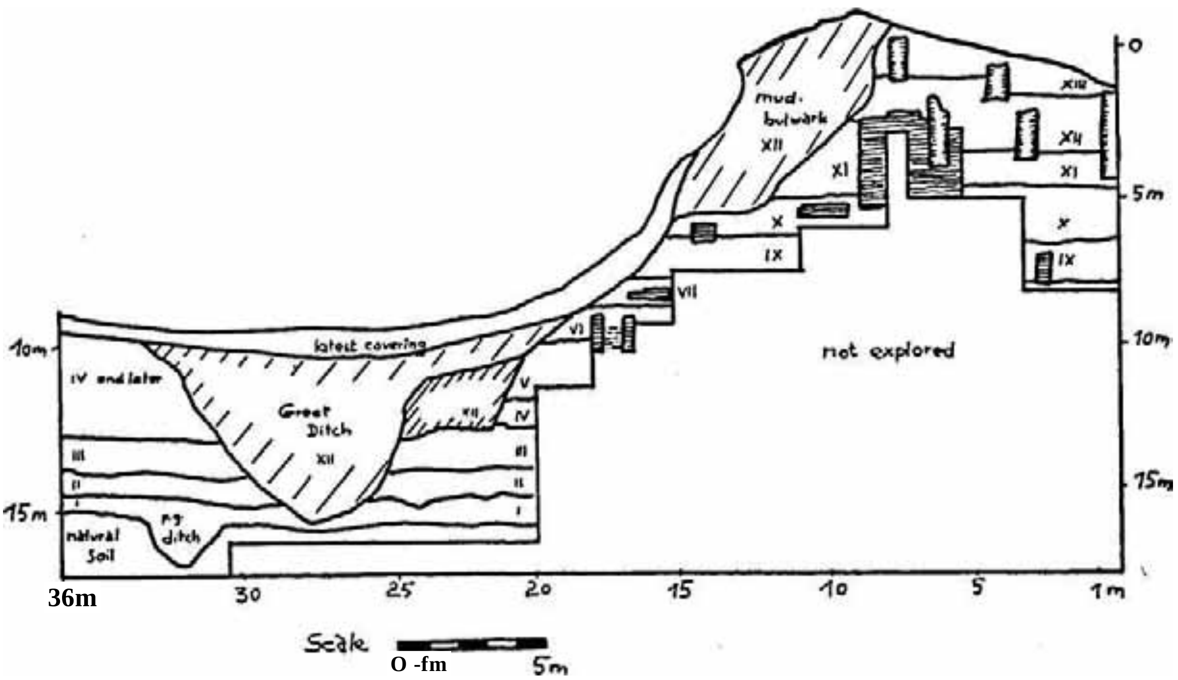


FIG. 8

succession. For this purpose a 36 x 5 m trench was laid out at the relatively 'undisturbed northern margin of the citadel elevation, touching its highest point and extending down to the middle level of the mound (pl. XXXI). In order to keep intact the connexion between the walls that were exposed by the digging and those which were still to be unearthed, it was decided to keep the structures (pl. XXXII A) as they were, till horizontal digging could be started and their proper behaviour ascertained. Only the two uppermost phases of the eighteenth century mud-brick structures had to be taken off. Thus, the trench, located on the slope assumed a step-like shape, the lower steps representing the earlier phases. In the course of excavation, thirteen phases could be traced, numbered here from the bottom upwards (fig. 8).

Phases I to V were attested in the northern half of the trench, while the higher phases VI to XIII were found to belong to the citadel part. Further investigation of the former was rendered more difficult by the presence of a great ditch that had been dug by the builders of the phase XII structures in the eighteenth century A.D. Since the upper width of the ditch measured 12 m and went narrowing down to the natural soil, no undisturbed layers were left in this part of the cut.

Phase I lay on the natural soil, which was reached on an average depth of 15-3 metres below datum. No structural remains could be traced, but a smaller ditch, two meters wide, was found crossing the bottom of the cut in east-west direction. The lowest point of the ditch lay at a depth of 17-30 m. In this phase occurred the Painted Grey Ware (pl. XXXIII) along with the black-and-red, brown polished including marble finish plain or coarse grey and red wares. Besides lumps of iron slag, quite a number of stone balls, beads (pl. XXXII B) circular terracotta cakes with and without decorated rim, fragments of terracotta bangles and whorls were also found.

Phase II is clearly separated from Phase I and is characterized by the occurrence of Northern Black Polished Ware. Besides the common red ware, the dishes, plates and bowls of plain or coarse grey (in one case brown) and black-slipped ware also found. A very mutilated fragment of a Maurya terracotta Mother Goddess and a rectangular copper coin (uninscribed cast) with 'crescent on hill' and 'plant with leaves' patterns are particularly noteworthy. At the northern end of the eastern profile (Square A 35), a steep, 2-3-m deep pit was struck, that sinks down far into the natural soil. It seems to be a circular pit.

Phase III is ascribable to the second century B.C. Dishes, plates and bowls of plain or coarse grey and black-slipped ware continued to appear besides those of the distinctive red pottery. The great ditch had obviously disturbed the layers of this phase, which contains brick debris suggesting the existence of brick structures inside the citadel area. At the very bottom of Phase III, two pieces of simple terracotta figurines a sheep's head and a bull, and a few carnelian and semi-precious stone beads were found. From the slope-side, a piece of gold-leaf ornament with concentric circles, and a big bronze plate with handles and thorns of hitherto not comparable shape and size (52 cm dia.) are to be mentioned.

Phase IV contains the oldest structures met within the trench. Besides a horizontal floor-like two-bricklayer (size: 52—28 cm), remains of two triangular drains, one above the other, were found. They are separated by a brick pavement. Both the drains probably extended to the north; just above the drains, at 11-65 m below datum, carbon sample was secured, which yielded a date of 160 -b 105 B.C.

Phase V could be traced only in the small range of the 20-m band, showing a few bricks.

Phase VI consists of the remains of two parallel walls standing 1 metre apart. There is reason to interpret this structure as a part of a gateway. From the deposit above the walls, a much mutilated piece of perforated Kushana relief was found.

Phase VII belongs to the citadel side of the cutting. On the slope, an oblique wall runs from east (lower part) to the west, perhaps indicating to be part of a rampart, leading to an entrance on the west. The oblique wall belongs to a complex of three other walls met with in the cutting. The pottery in this phase was of the coarse red type, but many sherds showed impressed *svastika* as decoration. A part of a kaolin bowl, decorated with creeper and lotus designs, (pl. XXXIII) and a red sherd with *hamsa*, lotus and other patterns add to the finds.

Phase VIII showed only a few traces of structures. But it is in this phase that another charcoal sample could be obtained, which gives a date of A.D 70 ± 100.

Phase IX is separated from the previous one by a rubble floor that extended from the slope to the southern end of the cutting. An immense conflagration deposit upon this floor indicates severe destruction of the respective layer. Within this deposit two structures could be exposed. Finds of a headless terracotta drummer and a jar with stamp indicate that we still move in the late Kushana to Gupta period. Phases IX and X together seem to have been destroyed by a great conflagration. After this event the mound seems to have been deserted for nearly one thousand years. It was in the medieval time that the uppermost three phases appeared.

Phase XI comprised remains of a rounded entrance tower of a gateway with connecting walls to the west. A charcoal sample from the foot of the tower yielded a date of A.D. 1480 ± 95. Later on, the baked brick walls of this phase served as foundation for the late mud-brick fortification of the Jat Hati Singh in the first half of the eighteenth century A.D.

Phase XII is the uppermost phase on the Sonkh mound.

54. EXPLORATION IN DISTRICT MEERUT.—Shri R. P. Sharma of the North-western Circle of the Survey explored Painted Grey Ware sites at Jarauthi and Sheonagri in Tahsil Hapur.

55. EXPLORATION IN DISTRICT SAHARANPUR.—In course of his exploration, Shri Shankar Nath of the North-western Circle of the Survey discovered Harappan and Ochre Colour Pottery sites at Asanwali, Baundki, Bazidpur Majra, Chhajpura, Chhaparheri, Chunehti-Gara, Chilehra, Daudpur, Fatehpur Jat, Fatehpur (Gujar), Ghana Khandi, Kabirpur, Kailaspur, Khatauli, Krishni, Lakhmanti kalan, Matki-Jharauli, Mohiuddinpur, Piki, Pinjaura, Reri Malakpur, Sarkari Kumar, Sarkari Shekh and Sherpur (Gujar) in Tahsil Saharanpur.

Ochre Colour Pottery along with Painted Grey are were found by him at Mandla and Salempur-Bhokri in Tahsil Saharanpur.

He also brought to light Painted Grey Ware sites at Ponwarka and Ugrahu-Mustahkam in Tehsil Saharanpur.

56. EXCAVATION AT BAHARIA, DISTRICT SHAHAJAHANPUR.- Shri V.D. Misra and Shri B.B. Misra of the Department of Ancient History, Culture and Archaeology of the University of Allahabad during the course of explorations in the District located a number of important sites yielding the Ochre Colour Pottery, painted red ware (pl. XXXIV A), P.G. Ware (pl. XXXIV B), N.B.P. Ware, seals and sealings, often inscribed, and terracotta figurines of Saka-Parthian and Gupta Periods. The more noteworthy among these was Baharia where, during the course of digging for the manufacture of bricks, two copper implements-a harpoon and a new type of sword-had been found. A few sherds of the Ochre Colour Pottery were collected in the vicinity of the find-spot.

With a view to ascertaining the nature of the deposit and to establishing the relationship, if any, between the Copper Hoard and the Ochre Colour Pottery, a small trench measuring 1.21 X 1.21 m was laid out near the find-spot of the Copper-hoard. The natural soil was struck at a depth of 1 metre. The total habitational deposit consisted of three layers: (i) composed of hard brownish clay, 25 cm thick (ii) pale brownish and sandy, 45 cm; and (iii) dark brownish clay imperceptibly merging with the natural soil

underneath, 30.48 cm. On enquiry, it was learnt that the copper implements were found at a depth of 91-4 cm below surface which falls in the last mentioned layer.

A few pot-sherds, mostly pale red (ochrous in colour), were found sporadically distributed in all the three layers. In some cases the sherds bore white incrustation which does not permit any study of surface treatment. Among the types obtained, mention may be made of vases with beaded trim and concave neck; (ii) globular vases with flared rim, having a shallow depression on the interior and short constricted neck; (iii) vases with splayed out featureless rim and (iv) vases with out-turned externally beaded rim. The Ware has striking similarity in texture, fabric and typology with the similar ware found at Atranjikhera.

57. EXCAVATION AT RAJGHAT, DISTRICT VARANASI.—The Department of Ancient Indian History, Culture and Archaeology of the Banaras Hindu University resumed *(1965-66,* pp. 54-55) excavation at Rajghat. The work was directed by Dr. K. K. Sinha. No new trenches were excavated, the work being continued in the last year's trench. It may be recalled that a reference was made last year to the discovery of a massive circular structure, dated to *circa* fourth-fifth century A.D. This structure, on excavation, was found to be a well-preserved brick-lined well with inner diameter measuring 2.35 m and outer as 7-76. The well was excavated to a depth of twenty-two courses, without reaching the bottom. An interesting feature of the well consisted of the lime-plastered surface seen preserved in a portion of the structure. The selection of the site for the construction of the well is rather intriguing. It is not easy to imagine why people should have thought it expedient to construct a well on such an elaborate scale on the edge of the habitation and in such close proximity to the river wherefrom water supply was assured round the year.

Lower down in the same trench, brick-structures of *circa* first century B.C. second century A.D., exposed during the last year, were found to have extended in the western area of the trench.

WEST BENGAL

58. EXPLORATION IN DISTRICTS BANKURA, BIRBHUM, BURDWAN, DARJEELING, MIDNAPORE AND PURULIA.—The Department of Archaeology, Government of West Bengal, undertook a systematic exploration in these Districts covering the deltaic valleys, the old alluvium and the western uplands. The explorations were conducted under Shri P. C. Das Gupta, with assistance from Shri D. K. Chakravarty and Dr. S. G. Mukherji.

In District Burdwan, the site of Bonkati, on the southern flank of the Ajay, was again explored, as a result of which Early Stone Age industry (pl. XXXV A) within a matrix of detrital laterite was found. The assemblage consisted of chopper-chopping tools and typical hand-adzes. Besides, some artifacts mainly on chert and flinty material and belonging to the Middle Stone Age were also found. The latest group of tool-types from Bonkati and its vicinity (including Rampurdangal) includes not only small or larger blades and scrapers but also a burin with its characteristic convex chamfered working point (pl. XXXV B).

Exploration at Indrani Pargun brought to light ruined foundation of a Pala temple stylistically ascribed to *circa* eleventh century A.D.

In District Birbhum, exploration in the valley of Bakreshwar resulted in the discovery of tools of Middle and Late Ages at Maligram, about 5 km to the east of Purandarpur.

In District Darjeeling, most of the area was covered with dense forests. Exploration on the southern flank of the Great Rangit resulted in the discovery of extensive ruins of

structures of roughly dressed stones besides series of megalithic monuments particularly at Badamtam (pl. XXXVII). These monuments belong to a tradition of different origin than those of the peninsula. Among the other monuments at Badamtam mention may be made a large hall with walls built of angular stones piled without any mortar or cementing material. Further exploration of the area resulted in the recovery of what appeared to be a chipped neolithic industry analogous to the chipped stone industry of South-East Asia. The tool is represented by a large flake, partly spilt up from a chunk of micaceous schist.

In District Jalpaiguri, the ancient mound of Raja Prithur Garh at Jordighi was explored. The survey brought to light two drum-shaped mounds. Of these, the smaller one seems to represent a Buddhist *stupa* while the larger one yielded a large number of architectural fragments of stone.

In District Midnapore, explorations was conducted in the valley of river where a large number of pebble-tools (pl. XXXVI A) and flakes on the eroded upland of Dhankamla and on the high terrace of Sapkotha hill were found. These tools belong to Levalloisian complex. An examination of the collection showed that chopper-chopping industry with a remarkable affinity with Sohan forms once flourished in this area, its main horizon being obviously the bed of detrital and secondary laterite with pebble conglomerates. One of the tools found on the terrace of Sapkotha by Shri E. D. Sampson reveals a transitional stage of a simple pebble-tool into a hand-axe.

In District Purulia, the exploration resulted in the discovery of a rolled and patinated cleaver of quartzite (pl. XXXVI B) with oblique edge within the gravels of a stream named Bondla close to Jaychandi hill. Besides, a rolled and sturdy Abbevillian hand-axe of gneiss along with a few unstandardized implements were also found in quartzite.

In District Bankura, the ancient site at Pokharna, identified with ancient Pushkarana on the southern banks of the Damodar, was explored. Besides a terracotta toy cart, figure of a ram with stamped decoration revealing Kushana style, the pottery collected at the site included the curved rim of a trough or dish of N.B.P. Ware, a stamped sherd representing the centre of a dish of polished black ware, a fragment of constricted stem of a vessel of red-slipped ware with signs of luting and a beautifully grooved footed shallow bowl or cup of black ware of sturdy fabric.

The site of Deulpota on the left bank of the Bhagirathi, about 9 km to the south of Diamond Harbour, was again explored, as a result of which more tools and flakes of flint and chert, often bearing a creamish or bluish patina along with cores and nodules were found. While typologically, such tools may be attributed to the Middle Stone Age, there are recognizable indications to ascribe a number of them to a complex which visibly inherited some of the predominent traits of the Early Stone Age.

59. EXPLORATION IN DISTRICT JALPAIGURI.—The Directorate of Archaeology Government of West Bengal, under Shri P. C. Das Gupta, assisted by Shri D. K. Chakravarty, and Dr. S. C. Mukherji conducted an intensive exploration amidst the ruins of Nalrajar Garh in Mendabari forest, District Jalpaiguri. While the main objective of the project .was to ascertain the cultural history of the region, Nalrajar Garh was explored primarily to determine the origin and dimension of a massive brick structure, the first of its kind to be encountered in West Bengal.

The ruins of Nalrajar Garh are situated in dense jungle. Some part of which especially the portion around ramparts was cleared up along with collapsed debris (pl. XXXIX B). The site was found to be fortified, the fortification being rectangular on plan and girded by a moat. The massive fortification stands to an extant height of about 4 to 7-5 m. On each

side were openings which might have served as entrances. Other significant features of the fortification-wall were two arches with sub-angular apex and three marginal courses of headers in the western and southern walls. In the course of the exploration, the arch on the southern wall was exposed. Among other features of Nalrajar Garh, special mention may be made of a chain of niches (pl. XXXVIII), 0-44 m broad at the base and 0-65 m high, aligned on the southern buttress of the western rampart. All of these, being fifteen in number, have a sloping base and a reclining chimney made of terracotta rings within the core of the buttress, ultimately opening on the top. These niches, aligned immediately above a ledge or platform and having signs of burning, structurally appear to be a series of furnances for smelting purposes.

The second imposing buttress on the western wall also shows signs of a row of similar chimneyed niches.

The entrance on the northern flank was protected by a projecting enclosure, built of bricks and reinforced with sandstone slabs.

Among other features, the north-eastern sector of the fortification and the 'L'-shaped aqueduct are very notable. This detached sector being 113-80 m long and 49-4 m broad has a stair-case (pl. XXXIX A) with stepped balustrades descending to the bed of the moat on the southern flank, exactly like its corresponding stair-case on the other side, represented by the receding northern flank of the main fortification. While the western flank of the fortified sector is plain, the wall on the opposite side of the moat or aqueduct recedes and emerges back in right angles to form a buttress at the mouth of the northern opening of the inner channel. This fort seems to have been repaired more than once, the patchworks being done to cover up breaches or damages caused by floods or other agencies.

The fortifications seem to have built during the Gupta period. The following sizes of baked bricks were recorded (sizes in cm): 19x20x4; 56x46x5; 27x22x5; 25-5x20x4; 28 X 23 X 5; 18 X 23 X 5; 22 X 18 X 5; 25-5 X 22 X 6; 20 X l8 X 4; 41 X 22 X 5; 38-5 X 25-5 X 5; and 25-5 X 28 X 5. Although the inner area of the fortification did not reveal any standing wall or structure, a little away from ramparts, a number of mounds or tumuli appeared to have concealed further relics of habitation.

Beyond the eastern rampart a large area flanked by two parallel moats was found to be scattered with massive relics of a temple-complex, mainly built of Himalayan sandstone and granite. A number of architectural fragments such as lintel, recessed members, an *amalaka* perched with *kalasa* and other fragments embellished with creepers, *gavaksha,* bead-and-reel, and a goose within foliated scroll characteristic of Gupta art were found. The temple-complex perhaps also contained one or more shrines of the Pala Period.

60. EXCAVATION AT RAJBADIDANGA, DISTRICT MURSHIDABAD.—In continuation of the previous season's work *(1964-65,* pp. 48-51) the Department of Archaeology of the University of Calcutta under Prof S. R. Das resumed excavation at Rajbadidanga. The horizontal layout was extended towards the eastern sector with a view to obtaining the complete plan of the *panchqyatana* temple-complex, partly exposed during 1964-65. This season's excavation was confined to four trenches (DY-4, EY-4, FY-4 and GY-4). In all these trenches, digging was continued up to Phase II platform-level at an average depth of 2-43 m below surface.

Excavation during the season revealed structural remains belonging to four principal structural phases. In all the trenches, Phase II platform, composed of *surki*-ramming on one course of broken bricks, laid on silt deposit was uncovered at an average depth of 2-43 m below surface. After a short break, Phase III buildings, comprising two long walls,

measuring 12.34 X 0-53 m from north to south and 4-34 X 0-6 m and from east to west were exposed. Both the walls formed parts of the temple-enclosure belonging to two constructional phases. One of the walls was found to be earlier than the other which was built for shortening the original area of the compound. The exterior eastern face of the subsequently-built wall B bore a row of beautiful niches like its northern and southern counterparts. The whole area up to the enclosure-wall was covered by a platform consisting of .*surki*-ramming on one course of brick-bat soling.

Two square shrine-structures, partly exposed during last season, were fully uncovered in north-western and south-western corners of the enclosure. The square shrine at north-western corner was completely robbed. The square shrine building at the south-western corner adjoining Phase IV platform, comprising one course of brick-bat soling in Trench GY-4 was exposed at a depth 1-9 m below surface. Towards the southern section of the Trench GY-4, a semicircular laying of brick-bats similar to the *ardhachandra* entrance platform discovered during 1964-65 in Trenches HY-1 and IY-1, was encountered in conformity with the Phase IV platform.

Phase V enclosure wall was found running over Phase III(B) compound wall in Trenches DY-4 and FY-4. This subsequent wall was built of robbed bricks from the earlier compound wall (B). This is clearly indicated by frequent uses of decorated and moulded bricks belonging to niches of the earlier wall (B) in its foundation. Further, in alignment with Phase V wall, two successive phases of platforms, comprising one course of brick-bat laying covering the compound-area, were also uncovered.

It was evident from the exposed building remains that the main shrine of the temple-complex and four square shrines at four corners of the rectangular enclosure were utilized successively from Phase III to Phase V.

Excavation revealed the complete plan of the *panchayatana* temple-complex—the southern, northern and western parts of the enclosure walls. The main shrine and its *ardhamandapa* were exposed during the last season's operations. In general, the previous season's cultural sequences and constructional phases have been confirmed by the results of this season's excavations. Phase III constructions are to be correlated with the seal producing level, dating from *circa* fifth-sixth century A.D. to *circa* eighth-ninth century A.D. The beginning of occupation at the site might be attributed to second-third century A.D. The building patterns at the site revealed characteristics of the Buddhist monastery establishments.

The excavation yielded some interesting finds: (i) a few inscribed terracotta sealings and seals, bearing legends of personal names, Buddhist formulae, etc. similar to those unearthed during the last season; (ii) pottery consisting of bowls, dishes, lids, fragmentary sprinklers, besides, highly polished black sherds from a well-stratified lower level in Trench GY-4; terracotta human and animal figurines, beads, discs, balls, game objects, stone objects including two polished stone celts retrieved from inside a heavy deposition of brick-debris and objects of iron (mostly nails), copper, bronze and shell.

On the strength of the seals and other remains, the site has been identified with the illustrious *Raktamrittikasangharama* described by the Chinese pilgrim Hiuen Tsang in the seventh century A.D. According to the records of the Chinese pilgrim, the *Raktamrittika* monastery stood in the suburb of Karnasuvarna, the famous capital city of the Gauda kingdom in the seventh century A.D. Accordingly, Karnasuvarna, the exact identification of which has been hitherto uncertain, is to be located in the neighbourhood of Rajbadidanga.

61. EXCAVATION AT CHANDRAKETUGARH, DISTRICT 24-PARGANAS.—The Asutosh Museum of Indian Art, University of Calcutta, resumed *(1965-66,* pp. 59-60) excavation at Chandraketugarh under Shri C. R. Roychoudhury. During this field season, work was undertaken at the extreme northern and eastern slopes of the Khana-Mihirer-Dhipi and adjoining protected areas of the mound.

The northern end of the mound revealed a flight of twenty steps, each measuring 6-5 x 1 *3 x 2 m supported on two massive side walls and descending from the end of the pillared porch of the main temple and ultimately ending on a pavement made of bricks on edge. In front of the pavement, rectangular foundation of bricks of a pillared *mandapa,* measuring 104 x 9-8 in of the same temple complex has also come to light. The massive-ness of the entrance-complex (pl. XL A) of the temple at Khana-Mihirer-Dhipi is something remarkable.

On the south-eastern corner of the main temple some 35 m from its outer massive wall, a small square miniature brick shrine (4-6 m X 4-6 m) was exposed (pl. XL B). The structure lacks elaborations which were found in the case of the two miniature shrines unearthed previously on two sides of the stair-case in front of the main temple. The foundation of the present miniature shrine was found to be fairly deep and seems to have been raised from the same horizon as that of the main temple. Irregular and over burnt bricks were used with mud mortar providing suitable off-sets up to the plinth level which gave a battered shape to all the four sides of the foundation wall. A square tapering pit at the centre of the shrine was traced after removing a portion of the brick-paved plinth. The foundation of another miniature shrine of similar type were traced on the south-western corner of the main temple in an extremely damaged condition.

Deep diggings, up to the natural soil in several trenches in the Khana-Mihirer-Dhipi area, brought forth several important antiquities of Periods I to III (Maurya to Kushana). Of Period I, several copper punch-marked coins of the 'ship type' and ivory objects, bone dice and beads of precious and semi-precious stones are noteworthy, besides a number of sherds of the N.B.P. Ware. Period II, covering the Sunga rule, yielded some unique terracotta figurines (pl. XLI A), of which a seated ruler in the round bedecked with jewellery and a headless dancing figure in the round deserve special mention. Belonging to the Period III were terracotta tablets (pl. XLI B, C and D) on various themes along with very fine fragments of the Rouletted Ware and contemporary pottery types.

In the course of the diggings of the Gupta structures at Khana-Mihirer-Dhipi, several Gupta and post-Gupta antiquities in the form of terracotta fragments, stone sculptures, stone querns and pottery dabbers were found, besides fragments of stucco floral decorative motifs of the main temple-wall itself.

H. EPIGRAPHY

SANSKRITIC AND DRAVIDIC INSCRIPTIONS[1]

ANDHRA PRADESH

1. CHALUKYA INSCRIPTION, RAMAPURAM, DISTRICT CUDDAPAH.—This inscription refers to the capture of Kanchi by Vikramaditya I, son of Pulakesin II.

2. REDDI CHARTER, PINAPALLI, DISTRICT EAST GODAVARI.—This copper-plate grant in Sanskrit, engraved in Telugu characters, is dated Saka 1346, Krodhin (A.D. 1424) and belongs to the reign of the Reddi chief Allada Vema. It records the grant made by the chief of the village Pinapanala, after renaming it after himself, to his minister Srigiri of Haritagotra.

GUJARAT

3. MAITRAKA CHARTERS, VADNAGAR, DISTRICT MEHSANA.—Two corroded copper plate charters were found near the Sharmishta lake and they belong to the reigns of kings Siladitya IV and V respectively and they record donations of land to some *brahmanas.*

HIMACHAL PRADESH

4. BRONZE IMAGE INSCRIPTION, BHURI SINGH MUSEUM, CHAMBA, DISTRICT CHAMBA.—This inscription, engraved on the arch of a bronze image of Durga, is in corrupt Sanskrit and Siddhamatrika characters of about the tenth century. It records that the image was caused to be made by Bhatta Sri-Sthana. It also mentions a certain Padmanabha Raghava who probably made the image.

KERALA

5. INSCRIPTION, THURAVOOR, DISTRICT ALLEPPEY.—This Sanskrit inscription from the Lakshminarasimha temple in Malayalam script records that the *dhvajasthambha* was erected by Ramavarma, the king.

[1] Information from: 1, the Director of Archaeology, Andhra Pradesh; 3, Director of Archaeology, Gujarat State; 5, 6 and 12, Director of Archaeology, Kerala; 7, Prof K. D. Bajpai, University of Sagar; 10, 11 and 15-19, Director of Archaeology, Madras; 20, Shri A. Ghosh, Director General, Archaeological Survey of India; 22-23, Director, Kannada Research Institute, Dharwar; 21 and 24, the Director of Archives and Archaeology, Maharashtra; 27, from the Director of Archaeology, Mysore; and the rest from the Chief Epigraphist of the Survey.

6. INSCRIPTION, NADUVATTAM, DISTRICT PALGHAT.—This Tamil inscription in Vatteluttu characters of about the eleventh century records an agreement *(Kachcham)* entered into between the servants of the *Perumal* of Rayiranallur and the *Agappoduval* of the place in respect of the supply of rice and provisions in the *Mukkalvattam.*

MADHYA PRADESH

7. INSCRIPTION, KADWAHA, DISTRICT GUNA.—An inscription on a stone slab is dated Vikrama 1311 (A.D. 1254) and mentions the name of Muhammad Shah Khalji.

8. STEP-WELL INSCRIPTION, SINGHPUR, DISTRICT GUNA.—This inscription (previously noticed) in Nagari characters and in Sanskrit and local dialect belongs to the time of Ghiyath'u-Din Khalji of Malwa and is dated Vikrama 1535 (A.D. 1479). It records the construction of the step-well by Rajamati, daughter of Bhairavadasa, son of Uvara and grandson of Chhajjala of Sirohinagara. It also gives the details of gifts made by several Sultans to Rajamati, and mentions Rajamati's son named Ramachandra, stated to be a *mahakavi* and a favourite of the Sultans Ghiyath'u-Din and Nasir'u-Din.

MADRAS

9. PALLAVA INSCRIPTION, MAHABALIPURAM, DISTRICT CHINGLEPUT.—This label inscription is engraved on the lintel of the entrance into the middle shrine (containing the image of reclining Vishnu i.e. *Sthala-sayanap-perumal)* of the Shore temple. It is in Grantha characters of the eighth century and reads *Sri Narapatisimha-Pallava-Vishnu-griham.*

10. PALLAVA INSCRIPTION, TIRUVORRIYUR, DISTRICT CHINGLEPUT.—On a pillar supporting nandi in the Adhipurisvara temple, is found an epigraph assignable to the ninth century. It refers to the gift of one lamp and ninety sheep, for a perpetual lamp in the temple of Tiruvorriyur Mahadeva by Tondamahadevi, the wife of Sharjjaraiyar and the daughter of Saktivarman Kaduvetti, for the merit of her husband.

11. CHOLA INSCRIPTION, VELACHERI, DISTRICT CHINGLEPUT.—Found in two parts, in a loose slab and on the basement of the *dhvajastambha,* in the Tiruttandisvara temple, this inscription is dated in the thirty-ninth regnal year of Parakesarivarman who conquered Madurai and Ham (evidently Parantaka I) and records a gift of ninety sheep for burning a perpetual lamp in the temple of Tiruttandisvara at Velacheri.

12. INSCRIPTION, SUCHINDRAM, DISTRICT KANYAKUMARI.—This inscription in Tamil language and script records that in Kollam 406 (A.D. 1130-31) in the month of Kanni the *Mahasabha* and *Sabha* of Suchindram held a combined sitting and decided to hand over their supervisory powers over certain temple servants to the *svamiyar* who presided over the meeting. It was further stipulated that in the event of the *svamiyar's* death the powers vested in him would rest with the king.

13. CHERA CHARTER, GOVERNMENT MUSEUM, MADRAS.—This charter, in Sanskrit and Tamil, is engraved carelessly in Tamil and Vatteluttu characters of about the

thirteenth century. It belongs to the second year of the reign of the Chera king Iravi Kodai and seems to record the grant of the village of Usavur *alias* Tiruvalimangalam in Perun-durai-nadu to the temple of Abhisheka-vinnagar in Irodu when the king was conducting the *abhisheka* at the *mandapa.*

14. PALLAVA INSCRIPTIONS, KIL-SATTAMANGALAM, DISTRICT NORTH ARCOT.—Four inscriptions belonging to the Pallava period were found on a rock called 'Perumal Parai' at Sattamangalam. One record dated in the fourteenth regnal year (A.D. 747) of Nandi-varman II registers a gift of gold by an individual for feeding ascetics *(tavasigal)*. This record refers to *Kamakkottam,* and this is the earliest reference to *Kamakkottam* in epigraphs of south India. The second one, dated in the fifty-third regnal year of Nandivarman II, refers to the gift of land for the maintenance of a tank bund. The third record of the same king dated in the fifty-sixth regnal year (A.D. 789) records a gift of gold to a *palli* (Jain temple) by a Jaina ascetic. The fourth record of the sixth year of Kampavarman registers a gift of a big bell to the *palli,* consecration of the shrine of Yakshi Bhatari the construction of a *mukhamandapa* and the renovation *o£ the palli* by a lady.

15. INSCRIPTION, KIL-SATTAMANGALAM, DISTRICT NORTH ARCOT.—A Chola inscrip tion dated in the tenth regnal year of Rajakesari (Raja Raja I) (A.D. 995-996) found on the roc'Perumal Parai' refers to a land for a perpetual lamp in the *palli* called Vimala Sri Arya Tirthappalli by an individual. Sattamangalam is in a division called Venkunra-kkottam, a sub-division of Venkunranadu. Another record found on the rock of the Chandranathasvami temple at the same village is dated in fifth regnal year of Parthivendravaman and refers to a gift of land to the Vishnu temple for food offerings.

16. VIJAYANAGARA CHARTER, KILAPATTU, DISTRICT NORTH ARCOT.—This charter is in Sanskrit engraved in Nandi-Nagari characters. It belongs to the time of king Krishnadevaraya, and is dated Saka 1432 (A.D. 1510). It records the royal grant of the village Kilaipattu along with Melappattu in Tachchur-nadu in Murvvamamgala [pattu] in Palkunnakotagam in Padaudumaharajya to several *brahmanas.* The writer of the record was Mallanacharya, son of Viranacharya.

17. PALLAVA INSCRIPTION, PERUMPULIPAKKAM, DISTRICT NORTH ARCOT.—Dated in the third regnal year of Vairameghavarman, this Tamil inscription engraved in a pillar in the *ardhamandapa* of the Agastisvara temple records a gift of 20 *kalanju* of gold for a perpetual lamp in the temple by an individual. Perumpulipakkam is said to be in the division of Tamarkkottam. So far only two epigraphs of Vairameghavarman have been copied.

18. CHOLA INSCRIPTION, PERUMPULIPAKKAM, DISTRICT NORTH ARCOT.—This Tamil inscription dated in the thirtieth regnal year (A.D. 1042-43) of Rajendra I records a gift for offerings by Malaiyan Kundavai *alias* Sembiyanmahadeviyar, the senior queen of the king.

19. PALLAVA INSCRIPTIONS, AGALUR, DISTRICT SOUTH ARCOT.—An inscription found on a rock at Agalur refers to the construction of a lake bund and also a sluice by one Kampaiyanar at Agalur in the fiftieth regnal year of Nandivarman II (A.D. 783). Another record found on a rock in the same place says that Kampaiyanar died at a battle, after destroying Tondur at the instance of Vijayaditya.

MAHARASHTRA

20. EARLY BRAHMI INSCRIPTIONS, AJANTA, DISTRICT AURANGABAD.—Two donative epigraphs, one painted and the other engraved, both in Prakrit language and in Brahmi characters of about the second century B.C. were found in Cave No. 10 at Ajanta. Of these, the painted one records the gift of a mendicant Dhamadeva and the other that of one Kanhaka.

21. TWO CHARTERS OF THE KUMBHAKARNA FAMILY, THALNER, DISTRICT DHULIA. ---These charters in Sanskrit and the Southern alphabet of about the seventh century were issued by *Maharaja* Bhanusena, son of *Maharaja* Svamira, of the Kumbhakarna family. Both the charters record a gift of land to a *brahmana* named Nagavasu, son of Bhattisura, belonging to Gautama-*sagotra* and to the Vajasaneyi branch of the Yajurveda and hailing from Sthalaka-nagara. Both these records are dated in the thirtieth year, probably of the reign of the ruler Bhanusena. The charters were written by one Deva, son of Prithvideva and the *dutaka* was Nagadasa who is described as a *Pratihara.*

22. CHALUKYA INSCRIPTION, ADAMPUR, DISTRICT NANDED.—This inscription in Kannada language and characters is dated Chalukya Vikrama year 40 (A.D. 1116). It records an assignment of a portion of the tax on land annually for the worship and offerings to the deity at Mulasthana and for the repairs to the temple by a number of officers including Sripati-nayaka, Anantapalayya and another officer of *Mahamandalesvari* Rebbaladevi.

23. YADAVA INSCRIPTION, ARDHAPUR, DISTRICT NANDED.—Dated in Saka 1113 (A.D. 1192) in the reign of Bhillama, this Sanskrit inscription engraved in Nagari characters introduces Ballala of the Ratta family, who bears the epithets *Yadavarajya-sthairyacharya* and Mailugi *mandalika-rajyapratishthacharya.* It records the grants of land and income from tax to the Siddhesvara and Mallikarjuna temples by two subordinates of the chief. The endowment is said to have been placed in charge of the Kalamukha ascetic Brahmarasideva.

24. COPPER-PLATE CHARTERS, VAJIRKHEDA, DISTRICT NASIK.—Two copper-plate charters belonging to the reign of the Rashtrakuta king Indra III and dated Saka 836 (A.D. 915) were discovered at the place. They record grant of some villages to two Jaina monasteries, one of them named Amogha.

25. STEP-WELL INSCRIPTION, OWSA, DISTRICT OSMANABAD.—This inscription in Sanskrit and Nagari, dated Vikrama 1 [7] 33 and Saka 15 [98] (A.D. 1676), records the construction of the step-well by *Raja* Nirmaladasa, son of Naraharidasa who is described as *Kalidharmavatara.*

MYSORE

26. COPPER-PLATE CHARTER, BANGALORE.—This charter in Sanskrit and Tamil languages engraved in Grantha and Tamil characters is dated Saka 1578 (A.D. 1656). It records the grant of lands to the shrines of some deities at Tirukkadavur by the members of the seventy-four sects of the Anjujati-Panchalattar.

27. BRAHMI INSCRIPTIONS, SANNATHI, DISTRICT GULBARGA.—Several slabs belonging to ruined Buddhist *stupas* found scattered over a vast area around Sannathi contained a number of short inscriptions in Brahmi characters (pl. XLII A) of about the second century A.D. They are mostly donative in character and contain names such as Ahimarika, Naganika, Arika, Detika, etc.

RAJASTHAN

28. STONE INSCRIPTION, KHED, DISTRICT BARMER.—This inscription in Nagari characters and Sanskrit language, engraved on the base of a sculptured *torana*, is dated Vikrama 1237 (A.D. 1180). It records the construction of a *torana* in the temple of Sri-Rishabhadeva in the village Sri-Kheta (i.e., Kheda) by [Patra] deva, Jagadeva, Sobhana and others for the welfare of Vaidya Jasapala-simdhala.

29. STONE INSCRIPTION, JALORE.—This is engraved on the left side of the first landing of the step-well locally called *Amra Bai ki vav*. It is in Sanskrit and in Nagari characters. Dated Vikrama 13 [19] (A.D. 1262), it records that the image of Ajitanatha in the temple of Mahavira was caused to be made by *Bham*. Sama[m]ta, Lakhamana, Devadhara and others together with Asada, his wife Rupala and family, for the welfare of [Puna ?] siha, son of Jasavira and his wife Rana, of Srimala family.

30. STONE INSCRIPTIONS, MANDOR, DISTRICT JODHPUR.—Two fragmentary and damaged records were found from the d6bris of the fort in the village. They are in Nagari characters of about the ninth century A.D. and in Sanskrit language. One of them mentions Sachidevi and the other contains the name Bhojadeva.

31. SANSKRIT INSCRIPTIONS, KUROLI, DISTRICT NAGAUR.—Three memorial stones with inscriptions in Sanskrit language and Nagari characters on them were found at a place called Lakhasan near the village. All the records are damaged very much. One of them, dated Vikrama 10 [33] (A.D. 976), seems to record some construction for a certain person. Another dated Vikrama 1040 (A.D. 983), also seems to record some construction. The third belonging to about the tenth century seems to record the installation of a memorial for a certain Vigraharaja (?), who probably died in a battle.

UTTAR PRADESH

32. STONE INSCRIPTIONS, GOPESVARA TEMPLE, GOPESHWAR, DISTRICT CHAMOLI.—Of these records (pi. XLII B), several are in local dialect or corrupt Sanskrit and are engraved in Nagari characters ranging in date from the tenth to sixteenth century. Most of them are pilgrim records and mention names of pilgrims like Vasudeva, Rajadeva, Vidyadhara and Vanita-bhata.

33. INSCRIPTIONS ON METAL TRISULA, GOPESVARA TEMPLE, GOPESHWAR, DISTRICT CHAMOLI.—Of the two inscriptions on the *trisula*, which is about 4-87 m high, the earlier one in Sanskrit is engraved in southern characters of about the seventh century, and mentions rulers like Skandanaga, Vibhunaga, Amsunaga and Ganapatinaga. It refers

to the setting up of the *trisula* (i.e. trident) in the temple of Rudra. The other inscription in Sanskrit and in Nagari characters of about the twelfth century A.D., refers to the reerection of the *Vijayastambha* by the king Asoka-challa.

34. STONE INSCRIPTION, KALI-MATH, DISTRICT CHAMOLI.—It is engraved on a slab fixed at the entrance of the Lakshmi shrine. This inscription (previously noticed) in Nagari characters of about the tenth century A.D. and Sanskrit language refers to a minister named *Bhatta* Bhavasarmman, son of *Bhatta* Rudra and Bhogavali. It records the construction of a temple named Bhavesvara by Bhava-sarmman.

35. BHAGAVATI TEMPLE INSCRIPTION, NALACHATTI, DISTRICT CHAMOLI.—This is engraved on the lintel of a small shrine in the compound of the Bhagavati temple. Written in Nagari characters and Sanskrit language, it is dated Saka 1078 (A.D. 1156) and records the construction of the temple of Harihara by a certain Manadeva.

36. INSCRIPTION OF SARVAVARMAN, SIROLI, DISTRICT CHAMOLI.—This inscription (pl. XLIII) in Sanskrit, engraved on a rock surface in northern characters of about the sixth century A.D., mentions *Maharajadhiraja* Sarvavarman and his subordinate Naravarman and records the construction of a water-reservoir by the latter.

37. COPPER-PLATE CHARTERS, DEVAPRAYAG, DISTRICT GARHWAL.—Two copper plate inscriptions in possession of the *pujari* of the Raghunathaji temple of the place, are in Nagari characters and Sanskrit language. One of them is dated Vikrama 1864 and Saka 1929 (A.D. 1807) and records the renovation of the Raghavalaya-chhatra by Vara-dacharya of Kamchi through *mantri* Sripati. The other charter belongs to the time of a certain Sudarsana Saha and bears the date Vikrama 1906 and Saka 1772 (A.D. 1850). It records the construction of a *dharmalaya* on the bank of the Vishnupadi river in Devaprayaga by Ambadattasarman, son of Jutu-sarman.

ARABIC AND PERSIAN INSCRIPTIONS[1]

ANDHRA PRADESH

1 MISCELLANEOUS INSCRIPTIONS, DISTRICT ANANTAPUR.—An inscription from Penukonda records the construction of a mosque by Sultan Fakhru'd-Din, a saint, in A.H. 693 (A.D. 1293-94). It is, thus, one of the early Islamic records in the region. Another inscription from the same place contains the text of a *sanad* (document) sanctioning the grant of land by Miyan 'Abdu'l-Hussain, the *Diwan,* to a *Faqir* (attendant of the shrine) for meeting the expenses of oil (i.e. lighting), etc., for the *khanqah* (of Shah Fakhru'd-Din) and adjacent buildings. It is dated Shuhur 1074, A.H. 1084 (A.D. 1673-74). A third record, also from Penukonda, records the construction of a mosque by the celebrated Sa'adatu'llah Khan, Mughal *Diwan* and Subedar of Karnatak, in A.H. 1122 (A.D. 1710-11).

[1] Information from Dr Z. A. Desai, Superintending Epigraphist for Arabic and Persian Inscriptions, of the Survey, assisted by Sarvashri S. A. Kadiri and M. F. Khan, who examined and reported about three hundred inscriptions during the year, some of which are described.

2. 'ADIL SHAHI INSCRIPTION, DISTRICT ANANTAPUR.—Another epigraph from Penukonda assigns the construction of a mosque in A.H. 1075 (A.D. 1664-65) to 'Aziza Sultan, during the governorship of the aforementioned 'Abdu'l-Hussain in the reign of 'Ali 'Adil Shah II.

3. MUGHAL INSCRIPTION, DISTRICT CUDDAPAH.—-A new record of Farrukh Siyar from Cuddapah assigns the construction of the 'Idgah of the town to 'Abdu'n-Nabi Khan, son of 'Abdu'r-Rahim, son of Buhlul Khan, in A.H. 1130 (A.D. 1717-18). Another inscription from the same place, records the construction of the Hall of the Prophet *(Aiwan-i-Nabi)* through the help of 'Abdu'n-Nabi Khan in A.H. 1135 (A.D. 1722-23); it does not, however, mention the name of the Mughal emperor.

4. EPITAPHS FROM DISTRICTS GUNTUR, HYDERABAD AND KRISHNA.—Two epitaphs of persons of foreign origin were found at Aminbada, District Guntur. According to one, Mr Mu'izzu'd-Din Muhammad, son of Sayyid Shah Baig, of Tafrish, expired in A.H. 1080 (A.D. 1669), and according to the other, Khurshid, wife, of 'Ali Asghar, son of Zambil, passed away in A.H. 1088 (A.D. 1678). A newly found epitaph from Hyderabad also records the demise of another lady, Khurshid Banu by name, which took place in A.H. 1061 (A.D. 1651). Another known epitaph from the same place containing only the religious text, seems, on re-examination, to bear the date A.H. 944 (A.D. 1537-38), in which case, it is doubtful if it could be the epitaph of the wife of the celebrated Qutb Shahi Prime Minister Ibn Khatun (cf. S. A. A. Bilgrami, *Landmarks of the Deccan,* Hyderabad, 1927, p. 42). Of the four epitaphs from Kondapalle, District Krishna, one records A.H. 909 (A.D. 1503) as the date of the demise of Muhammad Husain, son of Muhammad Rida al-Husaini, of Astarabad. The other three place the death of Aqa Jamshid, son of Haji Yusuf, Hasan Khatib, son of Qadi 'Alau'd-Din Mazandarani and Haji Hamza Khatib, in A.H. 1025 (A.D. 1616), A.H. 1028 (A.D. 1619) and A.H. 1056 (A.D. 1646) respectively. One more epitaph, from Vijayawada (Turkapalam), recording the date of the death, viz., A.H. 1148 or A.D. 1735-36, of Khwaja Abu'1-Wafa Khan *alias* Khwaja 'Ibadullah, traces his genealogy to the fourth caliph Hadrat 'Ali, through the famous Shah Khalilu'llah, son of the celebrated saint Shah Ni'matu'llah.

5. QUTB SHAHI INSCRIPTIONS, DISTRICTS KRISHNA AND NELLORE.—A new epigraph of Muhammad Quli Qutb Shah was found at Kondapalle. It assigns the construction, of a step-well to Maulana Jamalu'd-Din Muhammad Jilani in A.H. 993 (A.D. 1584-85). One of the two records of 'Abdu'llah Qutb Shah, from Udaygiri fort, District Nellore, which have been already noticed, records the construction of a mosque by the famous Qutb Shahi noble Ghazi 'Ali Fath Jang in A.H. 1052 (A.D. 1642-43), after his conquest of the fort. Its scribe Mir 'Aun 'Ali is stated to be a pupil of 'Muhammad Rida, the calligraphist'. The other assigns the construction of a mosque to Hussain Khan in A.H. 1061 (A.D. 1650-51) (cf. V. Rangacharya, *A Topographical List of Inscriptions of the Madras Presidency,* vol. II, Madras 1919, p. 1154).

GUJARAT

6. INSCRIPTION OF THE GUJARAT SULTANS, DISTRICT AHMADABAD.—The inscription from the so-called Rani Sabra'i's mosque, recording the construction of the mosque by the mother of Prince Abu Bakr, son of Mahmud Shah I, in the Shamshiyya year 4, A.H. 920

(A.D. 1514-15), was re-examined to determine the correct spelling of the name of the Queen. It was found that an alternative reading of the name which was first read as Rani Sipri (which is definitely incorrect) and later on as Rani Sabra'i (M. A. Chaghta'i, *Muslim Monuments of Ahmadabad through their Inscriptions,* Poona, 1942 pp. 73-74), could be Sara'i Rani (i.e. Rani from Sara), in District Surendranagar. Secondly, the term Shamsiyya is used for the regnal year (after the Sultan's title) and not for the 'solar year' as taken hitherto *(ibid.,* p. 74).

MADHYA PRADESH

7. NIZAM SHAHI INSCRIPTIONS, DISTRICT BETUL.—One record each from Kherla-Rawanwari and Somaripet, constitutes a new direction-notice set up in the time of Burhan Nizam Shah in A.H. 1000 (A.D. 1591-92). One of them points the roads, in five directions, to Jiwapur, Bhorgarh, Asir, Partabgarh and Saliya (?) and the other, in two directions, to Ellichpur and Chanda.

8. INSCRIPTIONS OF THE SULTANS OF MALWA, DISTRICTS DHAR, GUNA AND INDORE.—A known inscription from Dhar, District Dhar, was, on scrutiny, found to mention, firstly, Malik Sumbul as the builder of a tomb on the bank of a tank and secondly, a grandee Najm, son of Nizam, probably, as the occupant of the tomb. It was set up in A.H. 852 (A.D. 1448-49) in the time of Mahmud Shah I whose name Nasib Shah is also given (cf. *Epigraphia Indo-Moslemica,* 1909-10, p. 29, pl. XII, No. 2). Another known record of the same king, from Pipari, District Guna, was completely deciphered. It assigns the erection of a mosque in A.H. 855 (A.D. 1451), to Malik Mallu Khan and was composed by one Sulaiman (Cf. *Proceedings of the Asiatic Society, Bengal,* 1874, p. 71). A bilingual record from Indore, whose Persian version is noticed here for the first time, records the construction of a well by Malik Bahri Khan Salah Khani in the reign of Ghiyath Shah Khalji in A.H. 891 (A.D. 1485-86). But the most important, perhaps, of this group is the unique record (pl. XLIV) from Piranpur, District Guna, set up in the time of Ahmad Shah, son of Muhammad Shah. Dated A.H. 926 (A.D. 1520), this badly damaged epigraph records the construction of a well and refers to one Maliku'sh-Sharq Malik Fadla, Bharathi Chand the *Majmu'dar,* Muham mad Sha'ban Afghani attached to Khan-i-A'zam Afdal Khani, and Ramdas (son of) Lakhman. No record of this ruler had been found so far.

9. INSCRIPTIONS OF THE MUGHALS, DISTRICTS GUNA, EAST NIMAR, WEST NIMAR, INDORE, MANDASOR, SEHORE AND UJJAIN.—An inscription from Maheshwar, District West Nimar, recording the construction of a mosque in A.H. 984 (A.D. 1576), in the time of Akbar, mentions Mirza Ulugh Shah as the governor and Amir Sher Khan and Qadi Habban as the *Shiqdar* and official *Qadi* respectively. It also gives a few more details.

A group of five brass and copper guns, now kept in the Museum at Indore, contain interesting endorsements engraved thereon. Four of these have two identical endorsements each: according to one, these cannon were sent by the celebrated Raja Man Singh and entrusted to the custody of Dayal Das on the 14th Farwardi of Jahangir's second regnal year, and according to the other, on the 6th Shahriwar of his seventeenth regnal year, Mir Nazar Turbati received their custody. The fifth cannon has only one endorsement stating that the gun was transferred from the charge of Mir 'Ali to that of Harkisan on the 23rd Bahman of the second regnal year. An epigraph from Khandwa, District East Nimar,

pertaining to the time of Shah Jahan's governorship of Malwa, records the construction of a mosque by Sharafu'd-Din Hussain in A.H. 1029 (A.D. 1619-20).

Of the four records of Shah Jahan, one from Piprai, assigns the repairs to a well to Chaudhari Halim, son of Khan-i-Jahan (who does not seem to have anything to do with his far more celebrated namesakes), in A.H. 1045 (A.D. 1635-36). The second, from Maheshwar, dated A.H. 1048 (A.D. 1638), refers to the governorship of Sharif Khan and assigns the construction of a mosque to Mir Baqi Hisari. The third, from Bhikangaon, District East Nimar, purports that the local 'Idgah was built by Aurangzeb in A.H. 1953 (A.D. 1643-44); its text was inscribed by Husain Shirazi. The fourth, from Khargon District West Nimar, also refers to the tenure of Aurangzeb as governor, and states that Malik Husain, who was granted a fief in the region, constructed a garden with a well and a rest-house in A.H. 1065 (A.D. 1654-55).

Aurangzeb's inscriptions include one from Depalpur, District Indore, which records the construction of a mosque in A.H. 1089 (A.D. 1669-70) by Mir Shafi', son of Mir Muhiyu'd-Din Musawi. Another, from Sanwer, in the same District, assigning the construction of a mosque to Muhammad 'Adil Qadiri in A.H. 1085 (A.D. 1674), supplies the information that Randulah Khan was the *Jagirdar.* Another important Mughal nobleman's connexion with the region is indicated by two inscriptions from Kayampur, District Mandasor; he is Nawwab Qalandar Khan, by whose order a mosque was built in A.H. 1087 (A.D. 1676) under the supervision of Muhammad Ali and *Darugha* 'Abdu'r-Rahman. One more official, Qadi Najib Khan, is reported to have built the 'Idgah and a spacious garden around it in A.H. 1113 (A.D. 1701-02), for the recreation of the Muslims after 'Id prayers.

An epigraph from Ujjain, dated A.H. 1130 (A.D. 1717-18), in the reign of Farrukh Siyar, mentions the construction of a mosque by Hayat Khan, son of Baig, during the governorship of the famous Raja Jai Singh.

One of the two inscriptions of Muhammad Shah, from Ashta, District Sehore, recording the completion of a bastion of the fort, called 'Shah Burj' in the *Fasli* year 1128, corresponding to the fourth (?) regnal year of that emperor (A.D. 1723), refers to Nawwab Dost Muhammad Khan (of Bhopal) as the *Diwan* and Rahim Quli Khan as the *Faujdar.* It mentions two more officials, the *Darugha,* Rahim Baig, and the *Mushrif,* Ratan Singh, apart from giving the names of the masons. The second inscription from Ashta records the construction of a step-well and a gate by Mula'im Khan in A.H. 1140 (A.D. 1727-28) under the supervision of Sadr Muhammad. It refers to Muhammad Yar Khan, son of Nawwab Muhammad Dost Khan, and further mentions Tej Rai as *Diwan* and Devki Nandan as *Pishkar.*

10. INSCRIPTION OF THE HOLKARS, DISTRICT WEST NIMAR.—An epigraph appearing on the mausoleum of a Muslim saint at Khargon assigns the repairs and embellishment carried out to it by Banaji Mitkar, evidently a Maratha official, in A.H. 1177 (A.D. 1763-64) in the time of Malhar Rao Holkar.

MADRAS

11. MISCELLANEOUS INSCRIPTIONS, DISTRICT CHINGLEPUT.—Of the two epitaphs from Covelong (Kollam), one registers A.H. 883 (A.D. 1478) as the date of the demise of a person whose name is not given. According to the other, popularly believed to belong to the first century Hijra (seventh-eighth century A.D.), Isma'il, son of 'Abdu'llah Kutah (?) died in

A.H. 1002 (A.D. 1593-94). The Persian version of an interesting trilingual record, from Saidapet (Madras) states that the (Marmalong) bridge which was in a dilapidated condition, causing great inconvenience to the public, was re-built by an Armenian, called in the epigraph Armani, in A.D. 1726.

MAHARASHTRA

12. INSCRIPTION OF THE FARUQIS OF KHANDESH, DISTRICT AURANGABAD.—One more cannon of the Faruqi kings was found in the compound of the Police Chowki at Jafarabad, Jafarabad Taluk; the one was found at Kalyani, District Bidar *(Epigraphia Indo-Moslemica* 1935-36, p. 14), bears an inscription stating that it was cast in Asir fort, under the immediate supervision of Bara Malik, son of Kabiraji'u (?) in A.H. 985 (A.D. 1577-78).

13. MISCELLANEOUS INSCRIPTION, DISTRICT AURANGABAD.—An epigraph, dated A.H. 1197 (A.D. 1782-83), containing an Urdu peotical fragment, purporting to the cons truction of a mosque, was found at Ambad.

14. MUGHAL INSCRIPTIONS, DISTRICTS AURANGABAD AND OSMANABAD.—According to a fragmentary record of Akbar found at Shahgadh, District Aurangabad, which assigns the construction of some edifice to Wafadar Khan in Ilahi year 42, A.H. 1006 (A.D. 1597-98), prince Murad who had conquered Dakan (Deccan), was thinking of making the town his capital of the region for consolidation and further expansion.

An inscription from Jafarabad, District Aurangabad, records the construction of the fort in A.H. 1032 (A.D. 1622-23) during the reign of Jahangir by Ibrahim Husain, entitled 'Aqidat Khan, the *Bakhshi,* under the orders of prince Shah Jahan. This beautiful epigraph which mentions Yasin Jaunpuri as the mason, is one more epigraph designed by the calligraphist Khalf at-Tabrizi.

Of the two records of Shah Jahan, one from Shahgadh, assigns the completion of its lofty fort in A.H. 1049 (A.D. 1639-40) to the efforts of Ibrahim al-Musawi. The other, from Ausa, District Osmanabad, mentions another official Uzbek Khan Ghazi, who constructed a step-well there in A.H. 1056 (A.D. 1646-47).

An epigraph of Aurangzeb, from Shahgadh, dated A.H. 1070 (A.D. 1660), is interesting in that it proclaims the place to be a *Khalisa* land. It also refers to an official Sultan Singh Karori, as having taken steps (by constructing some structure?) to make the local market *(gudhri)* prosperous. Another epigraph from the same place, recording the completion of some edifice in A.H. 1094 (A.D. 1683), refers to one Gobardhan Das as an official and also mentions the place as included in *the jagir* of'Umdatu'1-Mulk Khan-i-Jahan Bahadur Zafar Jang Kokaltash. A third record, from the same place, records the construction (of a gate?) in A.H. 1106 (A.D. 1694-95), when Khwaja Zafaru'llah Naqshandi was the *Faujdar.* One more epigraph from the same place, registers the demise of a foreigner (an Armenian?), whose own name is lost, but whose father's name was Hurmazdyar. One more Mughal official Ri'ayat Khan 'Alamgir Shahi finds mention in a record, from Jafarabad (cf. *Gazetteer of Aurangabad,* Bombay, 1884, p. 847), which records the construction of a mosque in A.H. 1076 (A.D. 1665-66).

Two new records of Aurangzeb were found at Ausa. One of these is fragmentary; dated A.H. 1074 (A.D. 1663-64), it mentions Khwaja Barkhurdar Khan, the governor, and

Rindak, a follower of the Naqshbandi order. In the other, one more Mughal official, Suhrab Khan, is stated to have built a mosque in A.H. 1091 (A.D. 1680-81).

15. INSCRIPTIONS OF THE BAHMANIS, DISTRICT NANDED.—Two new inscriptions—both epitaphs—belonging to Bahmani Period were found at Kandahar. One of them records the death of Fakhru'n-Nisa, daughter of Sayyid Ahmad al-Husaini al-Hasharqani, who expired in A.H. 870 (A.D. 1465) in the time of Muhammad Shah III. The other being fragmentary, the exact purport is not clear. It records the date A.H. 902 (A.D. 1497), the name of the king Mahmud Shah and that of the scribe 'Ali a's-Sufi, who appears to be have been a calligraphist of merit.

16. 'ADIL SHAHI INSCRIPTION, DISTRICT NANDED.—An epigraph of the time of Ibrahim 'Adil Shah II, also from Kandhar, assigns the construction of a mosque, designated *Masjid-i-Rafi'-i-Muhammadi*, which took place in Shuhur 1014 corresponding to A.H. 1022 (A.D. 1613-14), to the efforts of 'Abdul'l-'Aziz.

17. NIZAM SHAHI INSCRIPTION, DISTRICT OSMANABAD.—One more gun bearing an inscription of the time of Burhan Nizam Shah I was found at Ausa. It refers to the king as Abu'l-Ghazi Nizam Shah and records the name of the manufacturer as Muhammad, son of Husain Rumi.

18. MISCELLANEOUS INSCRIPTIONS, DISTRICT OSMANABAD.—An inscription, from Ausa, assigning the construction of a well in A.H. 1024 (A.D. 1615), to Husain Khan, men tions Ghadanfar Khan, son of Qizilbash Khan, as the governor. Another record from the same place records the construction of a well in A.H. 1088 (A.D. 1677-78) by Rai Nirmal Das who is mentioned as 'a man of position and great learning'.

RAJASTHAN

19. MUGHAL INSCRIPTIONS, DISTRICTS BHARATPUR, JALOR AND NAGAUR.—A new, epigraph, dated A.H. 977 (A.D. 1569-70) in the reign of Akbar, was found at Katho, District Nagaur. It records the construction of a mosque by a grandee, Amir Kashmi by name, the work having been supervised by Nikbakht. The other inscription of the same emperor is from Nagaur, and it records the construction of a mosque in the Khanqah of the saint Shaikh Bayazid, a descendant of the famous thirteenth-century saint Qadi Hamidu'd-Din Nagauri, by Shah Kamal Khan in A.H. 997 (A.D. 1588-89).

An epigraph, from Jalor, dated A.H. 1017 (A.D. 1608), in the reign of Jahangir, who is styled as Nasiru'd-Din Abu'n-Nasr *(Epigraphia Indo-Moslemica*, 1949-50, p. 34), is, on re-examination, found to mention the fact that the governor of the region was Nawwab Ghaznavi Khanjiu, son of Malik Khanji'u (cf. *ibid.)*.

An epigraph from Dig, District Bharatpur, dated in the fourth regnal year of Shah Jahan, A.H. 1041 (A.D. 1631-32), which is engraved on the pedestal of a marble swing *(jhula)* invokes a prayer, namely that 'may the lofty burj (bastion, tower, palace) remain immune from destruction for ever'. At Bari Khatu, District Nagaur, were found two records of Shah Jahan. One, dated A.H. 1049 (A.D. 1639), refers to the construction of a mosque by Chauhan Nahir Shah, son of Miyan Shah, a stone-carver, and the other assigns the construction of another mosque in A.H. 1051 (A.D. 1641), to Jamal Shah, son of Adam, also of the Chauhan community.

An interesting epigraph of the time of Aurangzeb found by Shri N. G. Ganam, of the Survey at Junjala, in the same District, records the text of a decision arrived at, in A.H. 1089 (A.D. 1679), during the time of the jagir-holder Rao Inder Singh, son of Rai Singh and by the active participation of Dungarsi Gahlot, to the effect that none from the Hindu or Muslim residents should spend the income from the tank of Junjala in the *Pargana* Nagaur, for purposes other than that of repairs to the tank. Another new record of Aurangzeb, found at Nagaur, records the construction of the *Naqqar Khana* of the *Dargah* of Hadrat Sayyid Nur, the martyr, in A.H. 1100 (A.D. 1688-89). A new record of Shah 'Alam II, from Bari Khatu, dated A.H. 1180 (A.D. 1766), states that the mosque, which was in the old days constructed by the members of the Gor community was re-constructed by the community of the washermen.

20. KHALJI INSCRIPTION, DISTRICT JALOR.—A record, only part of which was published—and that too incorrectly and incompletely *(Epigraphia Indo-Moslemica,* 1935-36, p. 49)—was fully copied this year and deciphered. This beautifully executed epigraph was set up in the time of Qutbu'd-Din Mubarak Shah, and records the construction of a *Namazgah* (i.e. *'Idgah)* by Maliku'l-Umara Taju's-Daulat wa'd-Din Hushang (son of) Mahmud (son of) Muhammad (son of) 'Umar Kabuli, better known as Kark (popularly, but perhaps wrongly, designated as Gurg), in A.H. 718 (A.D. 1318), the supervisor of the construction being Nusrat (son of) Rustam (son of) Mahmud al-Ghori and the writer, Muhammad Lachin al-Shamsi (cf. *ibid.).*

21. INSCRIPTIONS OF THE SULTANS OF GUJARAT, DISTRICT JALOR.—Three new epigraphs of Mahmud Shah, the Sultan of Gujarat, set up in the time of a governor, were found in the District. Two of them, from Jalor, are fragmentary, but their extant portions contain the name of Malik Budh, son of Salar, entitled Hablu'1-Mulk, the *Muqta';* one of these bears the date A.H. 912 (A.D. 1506-07) by the same Malik Budh, who is further mentioned as the *Muqta'* of the *Shiq* of Jalor and *Pargana* of Mahmudabad *alias* Sanchor.

22. INSCRIPTIONS OF KHANZADAS, DISTRICT NAGAUR.—Two more new records of this less known dynasty were found at Nagaur. Both belong to the reign of Firuz Khan, son of Salah Khan. One of them records the construction of a mosque by a son of 'Ala, son of Sher Dil Khani in A.H. 880 (A.D. 1475) and the other records the construction of a *khanqah* in A.H. 885 (A.D. 1480-81).

23. MISCELLANEOUS INSCRIPTIONS, DISTRICT NAGAUR.—An early epitaph, from Nagaur, states that Shaikh Badru'd-Din, son of 'Uthman, son of Abi Bakr al-Jawwi, died in A.H. 631 (A.D. 1233). Another early inscription, dated A.H. 700 (A.D. 1301), was found at Bari Khatu; it contains only religious text. Two small epigraphs, found at the same place, contain the names of 'Adilshah Natthu and 'Ilmu'd-Din Natthu, two of the six martyrs who had lost their lives in A.H. 761 (A.D. 1360), while repulsing the attack of the Hindus *(1962-63,* p. 61). Another epitaph from Nagaur records A.H. 953 (A.D. 1546) as the date of demise of Shaikh Sadru'd-Din, who is mentioned as Jahan-Sadr. Two more new records of the famous Mir Muhammad Ma'sum Nami or Bakkar, a nobleman and literateur of Akbar's court, were found in the District. One, from Bari Khatu, is dated A.H. 1013 (A.D. 1604-05) and contains a Persian verse composed by him. The other was found engraved on the pillar of a temple at Parbatsar; it, likewise, contains another Persian

couplet composed by him. Recording his name with the title 'Nawwab Amir', the epigraph also states that he had reached this place in A.H. 1013 (A.D. 1604-05) on his way back from the ambassadorial assignment to 'Iraq (i.e. Iran).

UTTAR PRADESH

24. MISCELLANEOUS INSCRIPTIONS, DISTRICTS BULANDSHAHR, ETAH, FATEHPUR AND HARDOI.—A group of damaged or fragmentary epitaphs of sufficient historical interest, were found at Bilram, District Etah. The first of these (pl. XLV), comprising Persian verses, a few of which can be considered to provide a specimen of the thirteenth century Persian poetry in India, furnishes the interesting information that the deceased Nasiru'd-Din Muhammad, son of Mahmud Ghaznavi, died a martyr in a battle fought at Kakwan village in the Qanauj (Kanauj) territory in A.H. 647 (A.D. 1250). According to another epitaph, one Rashid, son of Mas'ud, son of Khudadad, was, likewise, killed 'in the path of Allah' in A.H. 658 (A.D. 1259-60). The third epitaph records the demise of the great Amir 'Izzu'd-Din Yusuf, son of Salar, which took place in A.H. 683 (A.D. 1284). The fourth one records A.H. 690 (A.D. 1291) as the date of the martyrdom of some one (name is lost) who also got killed 'in the path of Allah'. According to the fifth epitaph, another person to die a martyr's death, was Mafkharu'l-Umara Shihabu'd-Din Khalid, son of Abu Bakr Durmishi who was killed in the fort of Chandwar in A.H. 703 (A.D. 1303). Of the two more epitaphs which have lost their dates, but are evidently contemporary with the above, only one records some names—the deceased's name is lost, but the name of his father or grandfather is Hindu viz. Niranjan, which shows that he was a convert. An inscription from Sikandrabad, District Bulandshahr, assigns the construction of a mosque to a saintly personage Shaikh Husain, 'the pole-star of his time' in A.H. 972 (A.D. 1564-65). An undated inscription from Pihani, District Hardoi, records the name of the wife of Nizam, called Murtada Khan, son of Sadr-i-Jahan, a well-known personality of the time of Akbar; it was Khuban. According to another record from the same place, Murtada Khan built the tomb of his father in A.H. 1057 (A.D. 1647-48). The third record from the same place records the construction of the tomb of a lady—either his wife or mother—in A.H. 1068 (A.D. 1657-58). An undated inscription, from Baisuma, District Meerut, assignable to the fifteenth or sixteenth century on paleographical grounds, states that the recovery-accountants of the tombs (for which endowments must have existed) were Mujahid Khan Tarin, Miyan Karamu'llah son of Gopal Mahar (again a convert) and Askaran Kayath, the clerk.

25. KHALJI INSCRIPTION, DISTRICT EATH.—This fragmentary inscription of 'Alau'd-Din Khalji was found at Patiali. Its extant text contains, apart from the name and titles of the king, the name of Abu Bakr (son of) Ahmad (son of) 'Ali.

26. MUGHAL INSCRIPTIONS, DISTRICTS ETAH AND MEERUT.—A new record of emperor Humayun, from Barnawa, District Meerut, records the construction of a mosque by Jahangir Quli, son of Ibrahim Baig, through the efforts of Muhammad Quli, in A.H. 945 (A.D. 1538-39).

At Patiali was found an inscription of the time of Akbar, recording the excavation of a well in A.H. 1004 (A.D. 1595-96) by Mirza Muhammad Yusuf, son of the late Nawwab Muhammad Husain Khan, the work having been supervised by Khushhal.

m. NUMISMATICS AND TREASURE-TROVE [1]

ANDHRA PRADESH

1. COPPER COIN, BIBIPET, DISTRICT MEDAK.—A copper coin, roughly square in shape, having a legend in Persian, both on the obverse and the reverse, was obtained from a resident of the village. It is .assignable to the Qutb Shahi ruler, Abdulla Qutb Shah (A.D. 1626-1672).

BIHAR

2. MUGHAL COINS, MANGRO, DISTRICT HAZARIBAGH.—Two hundred and ninety-six Mughal silver coins were reported from the village Mangro as treasure-trove finds.

3. COPPER COINS, RASULPUR, DISTRICT MONGHYR.—One thousand five hundred and sixty-five coins of the Delhi Sultanate were reported as treasure-trove finds from the village Rasulpur in District Monghyr.

4. KUSHANA COINS, KUMHARIA, DISTRICT RANCHI.—One gold coin each of the Kushana rulers, Wima Kadphises and Huvishka, along with pieces of a gold bangle were reported as treasure-trove finds from the village Kumharia, Police Station Lohardaga. The gold coins had perhaps been used as ornaments as is evident by the loops attached to them.

KERALA

5. MISCELLANEOUS FINDS, PONNANI TALUK, DISTRICT PALGHAT.—A Siva *linga* and a necklace *(rudrakshamalai)* were collected as treasure-trove finds from Kalady.

MADHYA PRADESH

6. COINS AND SEALS, GWALIOR.—The seals and coins in the Gwalior Treasury were identified and recommended for acquisition for the Gwalior Museum. Most of these belong to the period of the Sindhiya rulers.

7. INDO-SASSANIAN COINS, DISTRICT NARSIMHAPUR.—Seven hundred and fifteen silver-mixed copper Indo-Sassanian coins were acquired as treasure-trove through the Deputy Collector, Narsimhapur. These coins bear the fire-altar, and bust of the king on the obverse and the legend *ma* on the reverse, coinciding with those on the Mandhata coins.

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[1] Information from: 1, Director of Archaeology and Museums, Andhra Pradesh; 2-4, Curator, Patna Museum, Patna; 5, Director of Archaeology and Museums, Kerala; 6-8, Director of Archaeology and Museums, Madhya Pradesh; 9, 27 and 28, Prof K. D. Bajpai, University of Saugor, Sagar; 10-19, Director of Archives and Archaeology, Maharashtra; 20, Education Department, Government of Manipur, Imphal; 21 and 22, Director of Archaeology, Mysore; and 23-26, Director of Archaeology and Museums, Raj as than.

8. COPPER COINS, ROYPUR, DISTRICT SEHORE.—Seventy-nine copper coins with legends in Persian and Arabic, discovered in a pot by an agriculturist in the jungle, were acquired through the police authorities, Sehore. These coins are yet to be identified.

9. COPPER COINS AND CLAY SEALINGS, TRIPURI, DISTRICT JABALPUR.—Copper coins bearing the legends *Siri Satasa*, *Sujethasenasa* and *Tripuri* in Sunga Brahmi characters were identified. Clay sealings, bearing the names of *maharaja* Sivabodhi and Vasubodhi, were also identified (above, p. 18).

MAHARASHTRA

10. COPPER COINS, BELAPUR TALUK, DISTRICT AKOLA.—Copper coins, weighing about thirty-three kilogrammes, discovered at Hatrun, were acquired as treasure-trove finds. These coins are yet to be identified.

11. MUGHAL COINS, CHANDUR TALUK, DISTRICT AMRAOTI.—One hundred and seventy-nine copper and one hundred silver coins of the Mughal rulers, Jahangir, Aurangzeb, Jahandar Shah, Farrukh Siyar, Muhammad Shah, Ahmad Shah, Bahadur Shah and Shah Alam II, discovered at Dhamak, were acquired as treasure-trove finds.

12. GADHAIA COINS, AURANGABAD.—One thousand and one hundred Gadhaia coins, discovered at Aurangabad, were acquired as treasure-trove finds.

13. LATER MUGHAL COINS, AURANGABAD TALUK.—Two hundred and fifty silver coins of Shah Alam II, discovered at Waregaon, were acquired.

14. GOLD ORNAMENTS, AURANGABAD TALUK.—Gold ornaments weighing 12-4 grams, discovered at Paithan, were acquired as treasure-trove finds.

15. GOLD COINS, JAFARABAD TALUK, DISTRICT AURANGABAD.—One hundred and twenty-four gold coins of the Yadava Period found at Devalzari were acquired as treasure-trove finds.

16. GOLD PLATES, KANNAD TALUK, DISTRICT AURANGABAD.—Gold plates, weighing 93*31 grams, discovered at Andhaner, were acquired as treasure-trove finds.

17. BRITISH COINS, PAITHAN TALUK, DISTRICT AURANGABAD.—Two hundred and sixty-eight silver coins of the British rulers, discovered at Gevrai, were acquired as treasure-trove finds.

18. BRITISH COINS, SILLOD TALUK, DISTRICT AURANGABAD.—One hundred and eighty-three silver coins of the British rulers, discovered at Shivana, were acquired as treasure-trove finds.

19. MUGHAL COINS, DARVHA TALUK, DISTRICT YEOTMAL.—Copper coins of the Mughals, weighing about 35 kilogrammes, discovered at Bori Arab, were acquired as treasure-trove finds.

MANIPUR

20. MISCELLANEOUS OBJECTS, IMPHAL.—A number of objects, including a fine miniature gold peacock, were unearthed while digging a drain in the 'Kangla' area of Imphal now under occupation of the Army. The objects are now with the police authorities.

MYSORE

21. GOLD COINS, DISTRICT BANGALORE.—Nineteen gold coins of the small *fanam* type, issued by the Mysore dynasty, and known as Kanthiraya *fanams*, were discovered at Sidi Hosakote.

22. SILVER COINS, DISTRICT BIJAPUR.—Eleven silver coins of the Bijapur Sultans were discovered at Alamatti.

RAJASTHAN

23. SILVER AND COPPER COINS, BHILWARA.—One hundred and forty-two silver and copper coins were acquired from the Collector, Bhilwara, as treasure-trove finds.

24. MUGHAL COINS, TAHSIL SANGOD, DISTRICT KOTA.—Seven silver Mughal coins, discovered at Anwa, were acquired as treasure-trove finds.

25. BRAHMANICAL SCULPTURES, KHARSADA, DISTRICT SIKAR.—Seven sculptures, consisting of an image each of Ganesa, Surya and Harihara and two each of Vishnu and Mahishasuramardini, found in the village Kharsada, were acquired as treasure-trove finds.

26. SILVER COINS, UDAIPUR.—Four hundred and ninety-two silver coins were acquired from the Collector, Udaipur, as treasure-trove finds.

UTTAR PRADESH

27. COINS OF THE RULERS OF KAUSAMBI, KAUSAMBI, DISTRICT ALLAHABAD.—Copper coins of four new rulers of Kausambi, Suryamitra, Visvamitra, Sivamitra and Sivadeva were identified.

28. COINS OF THE PANCHALA KINGS, AHICHCHHATRA, DISTRICT BAREILLY.—Coins of two new Panchala kings, Yajnadasa and Jethamitra, were identified. A new and rare coin of Achyuta, bearing his portrait, was discovered at Ahichchhatra.

IV. OTHER IMPORTANT DISCOVERIES

ANDHRA PRADESH

1. SCULPTURE OF VIRABHADRA, AGNIGUNDALA, DISTRICT GUNTUR.—A beautiful life-size black basalt stone sculpture of Virabhadra in a standing posture and having ten arms and belonging to the early medieval period, was found in a deserted temple by Shri K. Venkateswararao of the Survey.

2. EARLY HISTORICAL SITE, DIRGHASI, DISTRICT SRIKAKULAM.—Shri K. Venkates wararao of the Survey discovered an ancient site and some medieval temples about 400 metres north of Dirghasi village. During the exploration, large-size baked bricks were collected. The surface finds included red and red-slipped wares of early historical period and some shell bangles.

GUJARAT

3. ROCK-CUT CAVES, KADIYA DUNGAR, DISTRICT BROACH.—An epigraph in Brahmi characters was discovered by the Director of Archaeology, Gujarat, in one of the rock-cut caves, situated on the Kadiya hill near Zazpore village. Another important discovery consisted of a monolithic pillar, about 3-52 m high and having a capital with two lions emerging from a single body. A silver coin of the Indo-Greek ruler, Menander, was also found at the site. On the basis of stylistic and epigraphical evidence, the caves may be dated to the early centuries of the Christian era.

HARYANA

4. MEDIEVAL SCULPTURES, HAT, DISTRICT JIND.—Brahmanical sculptures belonging to the medieval period were found at Hat by Shri Suraj Bhan of the University of Panjab.

5. EARLY POTTERY, KALAYAT, DISTRICT JIND.—Shri Silak Ram, a research scholar of the University of Panjab, during the course of an exploration in Kalayat, collected sherds of the Pre-Harappan, Harappan, Painted Grey and N.B.P. Wares from the site.

6. MEDIEVAL SCULPTURES, JAURASI KHURD, DISTRICT KARNAL.—Brahmanical sculptures belonging to the medieval period were discovered at Jaurasi Khurd by Shri Suraj Bhan of the University of Panjab.

7. BRICK TEMPLE, SITA MADHI, DISTRICT KARNAL.—Shri Suraj Bhan of the University of Panjab, explored a brick temple at Sita Madhi. Only the curvilinear *sikhara* of the temple, which is datable to *circa* eleventh-twelfth century, is preserved.

JAMMU AND KASHMIR

8. MEGALITHS, DADASAR, TRAL, DISTRICT ANANTNAG.—The Director of Archives and Libraries, Jammu and Kashmir, reported the discovery of megaliths at Dadasar Tral.

KERALA

9. ROCK-CUT CAVES, DISTRICT KOZHIKODE.—The Director of Archaeology, Kerala, reported the discovery of rock-cut caves at Nananbra and Thanakottur Desam in the Tirur and Badagara Taluks of the District. The rock-cut cave at Nananbra has a central pillar with benches on the sides and was discovered while quarrying for laterite stones. Jars, bowls, vases and ring-stands were collected from the site. The former two types were in the Black-and-red Ware.

The rock-cut cave at Thanakottur Desom, discovered while quarrying for construction, is of the double-chambered variety, with central pillars and benches. Among the pottery-types recovered are four-legged jars, vases, bowls, ring-stands—all in Black-and-red Ware and iron implements.

10. MEGALITHIC POTTERY, PUNKUNNAM, DISTRICT TRICHUR.—The Director of Archaeology, Kerala, reported the discovery of burial pyriform jars in dull red ware from Punkunnam, in Trichur Taluk. These jars, which are respectively 1-35 and 1-9 metre in height and believed to be largest so far discovered in Kerala, have an externally collared rim, convex shoulder with a double row of finger-tip design, and a globular profile tapering to a truncated base. The contents of these included iron implements and small quantity of bones.

11. MEGALITHIC POTTERY, PEECHI, DISTRICT TRICHUR.—The Director of Archaeology, Kerala, reported the discovery of a large megalithic jar with bowls, vases etc., from Peechi.

MADHYA PRADESH

12. CHALCOLITHIC POTTERY, NEPAWALI, DISTRICT DHAR.—Shri V. S. Wakankar of the Vikram University, Ujjain, discovered sherds of Kayatha Ware at Nepawali.

13. PAINTED ROCK-SHELTERS, ADAMGARH, DISTRICT HOSHANGABAD.—Shri V. S. Wakankar of the Vikram University, Ujjain and Shri S. K. Pande of the University of Saugor located seventeen rock-shelters in the vicinity of Adamgarh and also prepared eye-copies and photographs of the paintings therein.

14. INSCRIPTION, PARWARA (PATWARA), DISTRICT JABALPUR.—Shri Virendra Kumar Tiwari of the Survey discovered a post-Gupta two-lined inscription in the village Parwara (Patwara), situated on the Jabalpur-Allahabad line in Tehsil Kanti, District Jabalpur.

15. PAINTED ROCK-SHELTERS AND CHALCOLITHIC POTTERY, DISTRICT RAISEN.—Shri V. S. Wakankar of the Vikram University, Ujjain and Shri S. K. Pande of of University of Saugor, located thirty-five rock-shelters at Bhimbetka Barkhada, sixty-three at Kharwai, fifty-three at Putli Karar and seventeen at Raisen. While sherds of Malwa Ware were found by them at Bhimbetka, Kharwai and Shahadkarad, Middle Stone Age tools and fragmentary human bones were noticed below the chalcolithic deposits at Kharwai.

16. STONE AGE TOOLS, BILKHARIA, DISTRICT RAISEN.—Shri V. S. Wakankar of the Vikram University, Ujjain, discovered tools and cores embedded in laterite deposits at the foot of a sandstone hill, along the road near Bilkharia, about 25 km east of Bhopal.

17. EARLY STONE AGE TOOLS, BHOPAL, DISTRICT SEHORE.—Shri V. S. Wakankar of the Vikram University, Ujjain, discovered cleavers, handaxes, scrapers, ovates and discoids along with flakes and cores near Ravishankar Nagar, Bhopal.

18. PAINTED ROCK-SHELTERS, BHOPAL, DISTRICT SEHORE.—Shri V. S. Wakankar of the Vikram University, Ujjain and Shri S. K. Pande of the University of Saugor surveyed thirty rock-shelters in the Bhopal area.

19. CHALCOLITHIC POTTERY, DISTRICT UJJAIN.—Shri V. S. Wakankar of the Vikram University, Ujjain, discovered sherds of the Kayatha Ware at Khacharoda, on the Ratlam-Nagda railway-line, Meen, about 10 km north of Khacharoda, Futipal, about 3.2 km south of Kayatha on the Kalisindh, and Dhangwada, about 24 km west of Ujjain, on the Chambal.

MYSORE

20. CHALUKYAN TEMPLES, GADAG TALUK, DISTRICT DHARWAR.—The Director of Archaeology and Museums, Mysore, reported the discovery of a number of Chalukyan monuments and sculptures in the Taluk. The most important among them are the Bhogesvara temple at Yeliseru, the Umamahesvara temple at Harti and the Narayana temple at Nilgund. The Virabhadra temple at Kurthakoti and a small Isvara temple at Hosur can be dated to *circa* ninth century. Mention may also be made of the Bhairava images from Balaganur, Nalavi, Malasamudra and Soratur, sculptures of Maleyavva at Asundi and the image of Nagarjuna at Nagavi, discovered in the same Taluk.

21. MEDIEVAL SCULPTURES, CHITAPUR, DISTRICT GULBARGA.—A large number of medieval sculptures and bronzes were reported from a Jain Basti by the Director of Archaeology and Museums, Mysore.

22. MEDIEVAL TEMPLE, SONDA, DISTRICT NORTH KANARA.—The Director of Archaeology and Museums, Mysore, reported the discovery of a small Venkataramana temple built in the sixteenth century by the Sonda Chiefs in imitation of the Chalukyan temples. The walls of the *navaranga* of the temple contain sculptured figures and scroll ornamentation.

ORISSA

23. BUDDHIST IMAGES, BANESWARNASI, DISTRICT CUTTACK.—The Director of Archaeology and Museums, Orissa, reported the discovery of images of Buddha and Padmapani Avalokitesvara from Baneswarnasi. The images have been acquired by the Orissa State Museum, Bhubaneshwar.

24. COPPER-PLATE, INANPUR, DISTRICT CUTTACK.—A copper-plate of Devananda Deva of the Nandodbhava dynasty was reported from the village Inanpur, by the Director of Archaeology and Museums, Orissa.

PUNJAB

25. MEDIEVAL SCULPTURE, DHOLBAHA, DISTRICT HOSHIARPUR.—The Director of Archives, and Curator, State Museum, Patiala, Punjab, reported the discovery of early and late medieval sculptures from the premises of the Jhandwali Devi temple. These include a sculptured door-jamb with *mithuna* poses, lion-hunt scene, head of an image of Ganesa, two sculptures showing Siva and Parvati and another Siva-Parvati seated on Nandi.

26. EARLY HISTORICAL SITE, DODIANA, DISTRICT HOSHIARPUR.—The Director of Archives, and Curator, State Museum, Patiala, Punjab, discovered an early historical site at Dodiana. Kushan coins, sherds of red ware and large-sized bricks measuring 45 x 38 x 25 cm were found at the site.

RAJASTHAN

27. MISCELLANEOUS SCULPTURES, DISTRICT BHARATPUR.—Images of Siva-Parvati and a Varaha Vishnu of the post-Gupta period were discovered by the Director of Archaeology and Museums, Rajasthan, from Kaman. He also reported the discovery of a torso of a *yaksha* of *circa* second-first century B.C. from Virabai in the District. Besides, two dozen sculptures including one each of Vishnu and Parvati were also discovered from Bharatpur area.

28. GUPTA TERRACOTTAS, BIKANER.—The Director of Archaeology and Museums, Rajasthan, reported the discovery of terracotta figures of Ganesa and Siva from Bikaner area.

29. CHALCOLITHIC POTTERY, DISTRICT KOTA.—Shri V. S. Wakankar of the Vikram University, Ujjain, discovered sherds of Malwa Ware at Gangdhar, about 3*2 km east of Chaumela Railway Station on Nagda-Kota railway line.

UTTAR PRADESH

30. ROCK-SHELTERS, DISTRICT ALLAHABAD.—Shri V. S. Wakankar of the Vikram University, Ujjain, discovered two painted rock-shelters near Chitroha Railway Station on Allahabad-Katni line.

V. RADIOCARBON DATES[1]

The radiocarbon dates presented here were measured during August 66-August 67 at the Tata Institute of Fundamental Research, Bombay. The sites[2] have been arranged Statewise. The dates given below were calculated on the basis of 5730 years half-life value. The dates in brackets have been obtained by using 1950 as the reference year, without, however, indicating the corresponding margin of error.

BIHAR

' 1. SARADKEL, DISTRICT RANCHI

TF-370. 'Asura' Culture, Charcoal from Trench SDK-2; A1-A2; layer 3, depth 0-07 m (?); Field No. SDK-2/65-248. — 1850 ± 100 (A.D. 100)

MADHYA PRADESH

2. ADAMGARH, DISTRICT HOSHANGABAD

TF-116. Rock-shelter Uncharred bones from Trench ADG-2; layer 3, depth 1-90 m; Field No. II. Comment: only inorganic fraction dated; probability of contamination high. — 2845 ± 105 (895 B.C.)

TF-120. Rock-shelter shells from Trench ADG-10; layer 2, depth 0-15 to 0-21 m; Field No. X. Comment: sample from pre-chalcolithic microlithic phase. — 7450 ± 130 (5500 B.C.)
General Comment: dating of collagen (organic" - fraction) from other bones from Adamgarh can alone confirm chronology of this Mesolithic culture.

3. KAYATHA, DISTRICT UJJAIN

TF-394. Pre-Mauryan' Charcoal from Trench KTH-1; — 2445 ± 100 (495 B.C.)

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[1] Contributed by Dr. D. P. Agrawal and Kumari Sheela Kusumgar.

[2] Samples submitted: 1, 5, 8 and 9 by the Archaeological Survey of India, New Delhi; 2, by the Vikram University, Ujjain; 3 and 4, by the Deccan College and Post-graduate Research Institute, Poona-6; 6, by the Aligarh University, Aligarh; and 7 by the Allahabad University, Allahabad.

layer 23, depth 5-80 m; Field No. 2.
' NaOH pretreatment was also given.

TF-396. Chalcolithic Culture 3680. ± 100 (1730 B.G.)
Charcoal from KTH-1;
layer 32, depth 7-8 m; Field No. 5.
NaOH pretreatment was also given.

TF-397. Chalcolithic Culture . . 3450 ± 100 (1500 B.C.)
Charcoal from KTH-1;
layer 33, depth 8 m; Field No. 7."
NaOH pretreatment was also given.

TF-399. Chalcolithic Culture . 3625 ± 100 (1675 B.G.)
Charcoal from KTH-1;
layer 37, depth 9-1 m; Field No. 8.
NaOH pretreatment was also given.

TF-400. Chalcolithic Culture, 3915 ± 110 (1965 B.C.)
Charcoal from KTH-1;
layer 38, depth 9-60 m; Field no. 9.
NaOH pretreatment was also given.

TF-401. Chalcolithic Culture. 3285 ± 105 (1335 B.C.)
Charcoal from KTH-1;
layer 39, depth 10 m; Field No. 10.
NaOH pretreatment was also given.

TF-402. Chalcolithic Culture 3330 ± 100 (1380 B.C.)
Charred wheat from KTH-1;
layer 35, depth not given, Field No. 11. .
NaOH pretreatment was also given.

TF-405. Chalcolithic Culture". 3415 ± 100 (1465 B.C.)
Charcoal from Trench KTH-2; layer 10, depth 3-5 m; Field No.14. NaOH pretreatment was also given.

MAHARASHTRA

SONEGAON, DISTRICT JPOONA

4. TF-383. Jorwe Culture ' 3280 ± 100 (1330 B.C.)
Charcoal from baulk; depth 4-3 m ; Field No. 69. Visible rootlets removed. NaOH pretreatment was also given.

TF-382. Jorwe Culture 3290 ± 100 (1340 B.C.)
Charred wheat'from Mound II;

layer 5, depth 2-2 m; Field No. 136.
NaOH pretreatment was also given.

TF-384. Jorwe Culture — 3515 ± 110 (1565 B.C.)
Charcoal from Mound II;
layer 7, depth 2-36 m; Field No. 321.
NaOH pretreatment was also given.

MYSORE

5. SANGANKALLU, DISTRICT BELLARY

TF-355. Neolithic Culture • 3535 ± 105 (1585 B.C.)
Charcoal from Trench SKL-5 (Rao's II);
layer 2, depth 14m; Field No. SKL 5,
Rao's 11/64-65/474. Visible rootlets were handpicked.
NaOH pretreatment was also given.

RAJASTHAN

6. KALIBANGAN, DISTRICT GANGANAGAR

TF-605. Harappa Culture — 3925 ± 110 (1975 B.C.)
Charcoal from Trench KLB-1; ZB 9, Qd. 3;
layer 10, depth 1-6 m; Field No. KLB-1,
ZB-9, Qd.3/C/1965-66-7. NaOH
pretreatment was also given. Comment:
belongs to late phase of citadel fortification.

TF-607. Harappa Culture — 4040 ± 125 (2090 B.C.)
Charred wheat and charcoal bits from KLB-2;
A8, Qd. 2; layer 18,
depth 4-1 m; Field No. KLB-2, A8 Qd. 1/G/
1965-66-9.

TF-608. Harappa Culture , 4025 dz 110 (2075 B.C.)
Charred wheat from Trench KLB-2, A-6,
Qd. 2, layer 18, depth 4-50 m; Field No.
KLB-2, A6, Qd.2/C/1965-66-10.

TF-599. Harappa Culture — 985 ± 100 (35 B.C.)
Animal bones from KLB-2;
XA17; Qd. 1, layer 4, depth 0-7 m; Field No. KLB-2,
XA-17, Qd.l/C/1965-66-1.

Comment: C^{14} date was obtained only from inorganic fraction and shows the extent to which this fraction can be contaminated. General comment: to reduce risk of contaminations, samples were collected from early levels with thick soil cover. TF-607 and TF-608 are from early phase.

UTTAR PRADESH

7. ATRANJIKHERA, DISTRICT ETAH

TF-415. Black-and-red Ware deposits 2520 ± 2 1 0 (570 B.G.)
Charcoal from baulk between Trenches El and E2; layer 8, depth 0-5 m; Field No. 3/1965.
Comment: sample is from a baulk, hence stratigraphy may be inexact. The large errors arise due to insufficiency of datable material.

8. LEKHAHIA, DISTRICT MIRZAPUR

TF-341. Rock-shelter. 160 ± 90 (A.D. 1790)
Charcoal from Trench LKH(M)-RS-I; Pit A sealed by layer 1, depth 0-12 m; Field No. LKH(M) 64/3004. NaOH pretreatment was also given.
Comment: shows later disturbance.

WEST BENGAL

9. MAHISDAL, DISTRICT BIRBHUM

TF-389. Early Iron Age. 2640 ± 105 (690 B.C.)
Charcoal from Trench MDL-1; XI-XII, Pit 2 sealed by IB, depth 0-55 m; Field No. MDZ-I/C/64-1, Visible rootlets were removed. NaOH pretreatment was also given.

TF-390. Chalcolithic Culture 2805 ± 100 (855 B.C.)
Charred rice from Trench MDL-1; 1-IIj layer 4, depth 1-45 m; Field No. MDL-I/C/64-2. NaOH pretreatment was also given.
Comment: from late phase.

TF-392. Chalcolithic Culture '.. . 3035 ± 110 (1085 B.G.)
Charcoal from Trench MDL-1;
IV-VI; layer 5, depth 1-30 m; Field No. MDL-l/C/64-4. Visible rootlets were removed. NaOH pretreatment was also given.
Comment: from middle phase.

TF-391. Chalcolithic Culture 3330 ± 105 (1380 B.C.)
Charcoal from Trench MDL-1; VII-VIII; Pit 3, sealed by layer 5, depth 1-60 m; ,
Field No. MDL-l/C/64-3.
Comment: from middle phase.

VI. MUSEUMS

1. ARCHAEOLOGICAL MUSEUM, AHAR.—The antiquities and pottery recovered from the excavations of the protohistoric site were re-arranged in a chronological order.

2. RAJPUTANA MUSEUM, AJMER.—The Museum was shifted from the central building in the Akbar's fort to the side galleries. In the first gallery, fifty select sculptures were displayed, while in the second, divided into two sections, inscriptions and other antiquities including those from Mohenjo-daro and Harappa, were displayed. Forty-seven copper and nineteen silver coins were added to the coin-cabinet of the Museum.

3. ALLAHABAD MUSEUM, ALLAHABAD.—A number of terracotta objects including seals and sealings and animal-shaped beads were acquired. Among the terracotta objects obtained from Kausambi, the following are more noteworthy: (i) a triangular skin-rubber having on one side the design of a vase with creepers and flowers; (ii) a dabber having on one side the figure of a man mounted on a horse and holding its reins in his left hand; (iii) a terracotta plaque, showing an elephant with three riders; and (iv) a terracotta female figure holding the twig of a tree with upraised left hand, recalling the *salabhanjikas* of the Mathura style of art. The first three objects belong to the Sunga Period while the fourth one is typically Kushan.

Of the clay sealings, one is the seal impression of the ruler Parvata of Kausambi, and bears the legend *Rajno Parvatasya* in Sanskrit language and Brahmi characters of *circa* second century B.C. It may be mentioned here that this ruler of Kausambi was so far known only from the coins which do not carry the title *Rajno.*

The other sealing was acquired from Kanauj. It bears the legend *Baladhikaranam* in the Gupta characters of about fifth century A.D.

The Museum also added to its collection eight animal-shaped beads representing bulls, frog, fish, etc.

4. GOVERNMENT MUSEUM, ALWAR.—The paintings in the Paintings Gallery were re-arranged and all the sculptures in the Museum were photographed.

5. ARCHAEOLOGICAL MUSEUM, AMBER.—With a view to presenting the past cultural relics of Rajasthan, antiquities from various excavated sites in Rajasthan were displayed in a chronological order in wall show-cases.

6. SHRI BHAVANI MUSEUM AND LIBRARY, AUNDH.—A separate section of sculptures and archaeological exhibits was organized. No significant acquisitions were made during the year under review.

7. MYSORE GOVERNMENT MUSEUM, BANGALORE.—The Archaeological Section of the Museum was re-organized (pi. XLVI). New show-cases were acquired for the display of archaeological specimens. Specimens of pottery recovered from the megalithic site at Jadi-genahalli and terracotta objects from the megalithic sites at Hosakote and Anekal, collected by Shrimati Jean Patterson and donated as gift through the British Council, Bangalore, were displayed in these show-cases.

In the Sculpture Gallery, the images of Ganesa, Surya, Kaliyamardana, creeper-scroll, a torso and two hero-stones, belonging to the Hoysala Period, all collected from Halebid, were displayed. Another important addition to the Sculpture Gallery was the panel from the Buddhist site at Sannathi, District Gulbarga, showing Siddartha in the garden. A few reliefs of the Pallava and Chola Periods from Begur, near Bangalore, were also acquired.

Two Roman coins of Augustus and Tiberius and thirty-two coins of the reign of Akbar were added to the coin collection of the Museum.

8. MUSEUM AND PICTURE GALLERY, BARODA.—The programme of modernizing the display in the Archaeological Section was further continued this year. Two show-cases, containing exhibits of the Gandhara, Pala and Sena schools, were arranged. Among the noteworthy acquisitions mention may be made of a four-legged bronze seat (pi. XLVII A), belonging to the Hoysala Period and datable to *circa* twelfth century A.D. Its legs and sides are richly ornamented with *kirtimukhas,* hunting scenes, sacrificial scenes, etc. The Museum also added to its collection: (i) a schist stone image of Varaha (pi. XLVII B) from Shamlaji, datable to the ninth century; (ii) a black stone image of Siva-Parvati, from Dohad, District Panch Mahals; (iii) a large red stone head of the Buddha; (iv) a sandstone *chaturmukhalinga;* and (v) a stone image of the Jain Ambika from District Panch Mahals.

The Museum also organized a special exhibition on 'Woodwork of Gujarat'.

9. STATE MUSEUM, BHARATPUR.—The Museum acquired a *yaksha* figure, along with several other sculptures of the Gupta and late Gupta Periods. The *yaksha* figure is headless and shows a sword in his belt hanging on the side. The display in the Paintings and the Arms Galleries was improved.

10. HINDUSTAN CHARITY TRUST MUSEUM, BHOPAL.—Sculptures were collected by the Museum from the ancient site of Ashapuri in District Raisen.

11. ORISSA STATE MUSEUM, BHUBANESHWAR.—About two hundred and thirty-eight manuscripts were added to the Manuscripts Section. The Museum also acquired eighty copper and silver coins of the medieval and modern periods for its Numismatics Section. The Anthropology Gallery devoted to the tribes of Orissa was opened by the Governor of Orissa in April, 1966. The Prehistory, Art and Natural History Sections are being organized and steps have been taken for the collection of specimens and antiquities.

12. GANGA GOLDEN JUBILEE MUSEUM, BIKANER.—With a view to making the display more effective, the Bronze, Terracotta and Arms Sections were re-arranged. Display in the Sections located in the upper storey of the building was also improved.

13. ARCHAEOLOHICAL MUSEUM, BODH GAYA.—Three sculptures of the Pala Period were acquired by the Museum on loan from the Archaeological Section of the Indian Museum, Calcutta.

14. PRINCE OF WALES MUSEUM OF WESTERN INDIA, BOMBAY.—During the year, the Museum received a gift of six hundred and thirty-one coins, from the Uttar Pradesh Government. These include four-hundred and sixteen silver, two hundred and thirteen

copper and two alloy coins, mostly belonging to the Mughal Period. Index-cards for these coins were also prepared.

Among the other exhibits of special importance acquired for the Section are a *chauri*-bearer from central India (eleventh century A.D.), Ambika (pl. XLVIII A, ninth century) and Durga (seventh-eighth century). The Archaeological Survey of India presented to the Museum crystal reliquaries from Pitalkhora, sculptures of *yakshas* (pl. XLVIII B), flying *gandharvas*, musicians, *mithunas* and Gaja-Lakshmi. Tentative plans were prepared for re-organizing the Sculpture Gallery.

Index-cards of all the coins were classified and arranged according to the cabinets, lines and slots; the preparation of a list of the coins in the Museum collection was also taken up.

15. ASUTOSH MUSEUM OF INDIAN ART, CALCUTTA.—The Museum undertook extensive programme of exploration and collection in the lower, central and western parts of West Bengal, apart from the excavations at Chandraketugarh, District 24 Parganas. As a result, over two-thousand objects belonging to the period from the sixth century B.C. to the late medieval period and also contemporary objects including those of folk-art were added to the collection of the Museum. Some representative works of art and antiquity from different parts of India were also acquired through gifts and purchase. From surface collections around Bagridihi, Mayata, Jharboni and adjoining areas in District Midnapore, Shri Sambhunath Ghatak obtained for the Museum a large number of geometric and non-geometric microliths comparable to those from Birbhanpur on the Damodar in District Burdwan.

The Museum also collected: early historic terracottas, stone beads, pottery and fragments of medieval stone sculptures from Motasur, a fortified settlement site on the Mayurakshi river, about 15-2 m from Sainthia Railway Station; early pottery, about one hundred stone beads and about a dozen cast copper coins from Harinarayanpur, District 24-Parganas; a number of early terracottas from Chandraketugarh, 24-Parganas, including a toy-cart (pl. XLIX A) of *circa* first century A.D. showing a demon devouring a tortoise (pl. XLIX B), and another toy-cart depicting a royal couple riding a caparisioned camel of the same period, a mutilated figure of Lakshmi holding lotuses, a unique plaque depicting a beautiful female figure dancing to the accompaniment of a harp played by a prince; an inscribed sealing, and a large crystal ear-stud, a mutilated terracotta winged robust male figure and a terracotta head of a male figure (pl. XLIX C) with elaborate head-gear datable to the first century B.C.

Of the important stone objects acquired as gifts or through purchase, mention may be made of: a stone Sarasvati; a Vishnu image of *circa* eleventh century A.D., the upper part of a stone Mahisamardini figure *of circa* twelfth century A.D., from District Hooghly; a remarkable mutilated stone image of Vamana *avatara* of *circa* ninth century A.D. ; a metal sculpture; a sixteenth century bronze Gaja-Lakshmi (pl. LB) from Hooghly, Bengal; and a sixteenth century inscribed bronze image of a Jaina tirthankara from Rajasthan. Among other notable acquisitions, special mention may be made of illuminated Orissan wooden tablets showing *Kandarparatha, Vastraharana* and scenes from *Gita-Govinda* of the eighteenth century; a Jaina manuscript cover of the same date from Rajasthan and early medieval painted Orissan palm-leaf manuscript (pi. L A) pages of the *Bhagavata Gita* and *Kamasastra.*

The Museum also acquired specimens of arts and crafts and textiles of early nineteenth century from Bengal, which include a large *Vrishakashtha* from District 24-Parganas and several embroidered *kanthas* from Jessore, decorative stone sweet-meat mould (pi. L G) from Mymensingh.

16. STATE ARCHAEOLOGICAL GALLERY, CALCUTTA.—The Museum acquired a number of objects during the year. The noteworthy ones among these are: a protohistoric copper stamp seal with conventional compartmented motif and a projected strip or handle from Iran presented by Shrimati Judy Birmingham: a stone *Vishnu-patta* (12-3 cm X 12-3 cm) of about eleventh century A.D., from Jayanagar, District 24-Parganas, presented by Shri A. Dutta, a four-armed Vishnu flanked by Lakshmi and Sarasvati (pi. LI A) along with *ayadhapurushas* and stylistically assignable to *circa* eleventh century A.D., from Gazole, District Malda, a Mahisasuramardini (pi. LI B) of black basalt carved in Pala style presented by Shri S. S. Nehalia of Jiyaganj, a gold coin of Kanishka (pi. LII A and B) of the well-known but rare 'Oesho' variety from the toe of the main mound of Pandu Rajar Dhibi in District Burdwan and a ritualistic brass bell (pi. LII G—*circa* eighteenth century), inscribed with *'Vajraguru Padmasiddhi'* in Tibetan from the Jalpesvara temple near Maynaguri in District Jalpaiguri. Besides, a good number of terracotta plaques and figurines of the Sunga and Kushana Periods were also collected from Chandraketugarh, in District 24-Parganas. Among these may be mentioned a lady with an elaborate coiffure feeding a deer.

Among acquisitions of paintings, mention may be made of: painting in oil on canvas, showing two women and a rose executed in the style of the Kalighat school of paintings (pl. LIII A); a portrait of a young lady (pl. LIII B) from Hazarduari, Murshidabad, acquired on loan; and a set of wood panels from Kalna in District Burdwan depicting Mahavidya Kamala, Harihara, Mahisamardini, and dancing Radha before Krishna playing flute. Other important paintings acquired include: a painting of Mahavidya *{circa* nineteenth century) presumably from District 24-Parganas or Hooghly, presented by Shri C. L. Nowlakha of Calcutta; and an ensemble of paintings of the Rajasthani, Pahari and popular Mughal schools mostly belonging to the eighteenth-nineteenth centuries.

Besides, a good number of bronze and brass figures and objects from the western districts of Bengal, set of ivory chessmen (pi. LIV A, B and C) from Murshidabad representing European and Indian soldiers, specimens of textiles like muslin (eighteenth-nineteenth centuries) and *jamdanis* from Dacca and also a few nineteenth century silk-brocade *saris,* known as *Baluchar,* were also added the Museum collection.

17. BHURI SINGH MUSEUM, CHAMBA.—Three stone sculptures, four carved stone slabs, one bronze statuette, two pieces of wood-carvings, four pieces of painted wood-work, one Pahari painting, three brush drawings in Pahari style, three illustrated manuscripts, five emboidered textiles and seventeen objects of handicrafts of miscellaneous nature besides a large number of replicas were added to the Museum by purchase or exploration.

Of the stone sculptures acquired for the Museum, a Bodhisattava image of the third century A.D. and a fragment of a *torana* from village Hatkoti in District Mahasu are worth mentioning.

Costumes of the tribal people of District Chamba were also added to enrich the section. Wood-carvings from Bharmour, different paintings in Pahari style and other objects were arranged and displayed in one room and replicas of important Indian sculptures in another.

18. STATE CHANDRADHARI MUSEUM, DARBHANGA.—A number of potsherds, carved stone pieces and animal figurines, recovered during the earthwork in connexion with the construction of a bund on the river Kosi, were collected by the Museum from Kunouli in District Saharsa, Bihar.

19. ASSAM STATE MUSEUM, GAUHATI.—During the year under review, the Sculpture Gallery was re-arranged. A few important sculptures were displayed on specially prepared wooden pedestals of modern design.

Specimens of Indian coins ranging from the punch-marked coins down to the late Mughal coins as well as Assam Coins, were displayed in a sheet glass show-case specially made for this purpose. Casts of certain other Indian coins were acquired from the Indian Museum, Calcutta. A short note on the history of Indian coins including that of Assam coins has been put up for the visitors.

The Museum also acquired nine silver Jayantiya coins of Saka 1653, small coins of East India Company, Queen Victoria and George V, a silver coin of the Nepalese ruler Prithvi Vira Vikrama Shah Deva.

In the Birds and Animals Section, a peacock-dioroma was installed. Besides, as many as twenty stuffed and mounted specimens of birds and animals and twenty-two horns of deer, and buffalo were added to this Section.

20. GWALIOR MUSEUM, GWALIOR.—The Museum acquired coins found from Districts Balaghat, Betul, East Nimar, Guna, Panna and Raipur.

21. GOVERNMENT MUSEUM, GULBARGA.—The Museum building was repaired and the galleries re-arranged. Among the acquisitions made by the Museum are Buddhist sculptures and inscriptions from Sannathi, and twenty sculptures from various sites. In addition, two Roman coins, two beautiful seated Parsvanatha figures of about the twelfth century, two Chalukyan pillars and a small gun belonging to about the seventeenth century were also acquired.

22. ARCHAEOLOGICAL MUSEUM, HAMPI.—Large-sized sculptures and architectural pieces were displayed in the open-air annexe in front of the 'Guards' Quarters', which houses the main collection. The small sculptures were displayed in the 'Elephants' Stables', which also forms part of the Museum.

Ten gold *Varaha* coins of king Devaraya II (A.D. 1422-1446) were acquired through treasure trove find in Hospet Taluk.

23. STATE ARCHAEOLOGICAL MUSEUM, HYDERABAD.—The Museum is being enlarged and two new buildings, one for contemporary paintings and the other for excavated anti quities are under construction.

During the period under report, a large number of contemporary art objects were acquired. The Museum also acquired through exchange a representative collection of north Indian sculptures.

The Museum also participated in the All India Industrial Exhibition where select paintings, textiles, sculptures, coins and other objects were displayed.

The Museum added to its collection three thousand one hundred and sixty-two coins, of which one coin is of gold, twenty-nine coins of base gold, four hundred and fifty-seven coins of silver, two thousand five hundred and sixty-eight of base silver, seventy-eight of copper and twenty-nine of lead. Besides, ten Kolhapur paintings, six late Rajasthani paintings, two paintings from Gujarat and Rajasthan, one bronze basin of Qutb Shahi Period, one palm-leaf manuscript and twenty-eight contemporary paintings were also acquired for the Museum. Nineteen sets of copper-plate grants were received from the collection of the the Late Shri Mallampalli Somasekhara Sarma.

During the period under report, cataloguing of all the sculptures displayed in the Museum was completed. The work of classification of microlithic implements has been taken up and different exhibits are being studied for preparing catalogues.

24. MANIPUR STATE MUSEUM, IMPHAL.—A group of five sculptured stones from Bishenpur have been acquired for the Museum.

25. CENTRAL MUSEUM, JAIPUR.—Finishing touches were given to the dioramas and the bronze and wood figures were re-arranged. The paintings displayed in the show-cases were placed in a slanting position. In the Central Hall slanting roofs were constructed over the dioramas presenting different themes in order to present a good view from the upper storey.

26. ARCHAEOLOGICAL MUSEUM, JHALAWAR.—The rooms, which were previously in the possession of the Public Works Department, were taken over for display of sculptures and local objects. These were re-arranged and displayed in a chronological order in the new portion of the building. Several exhibits of local importance were also put on display.

27. SARDAR MUSEUM, JODHPUR.—The exhibits from Marwar, which were displayed in the desk show-cases, were shifted to the wall show-cases and overall improvements were made in the display of the other exhibits.

28. ARCHAEOLOGICAL MUSEUM, KHAJURAHO.—The loose Brahmanical, Jaina and Buddhist sculptures and architectural pieces from the temples at Khajuraho, datable between the tenth and twelfth centuries, have been displayed in the Main Hall with separate galleries for Jaina, Vaishnava, Saiva and secular sculptures. The reserve collection was arranged for display in the open-air.

29. ARCHAEOLOGICAL MUSEUM, KOLHAPUR.—The Museum acquired the following: terracotta figurines of the pre-Satavahana and Satavahana periods; some stone implements presented by Shri P. D. Sabane; Roman clay bullae presented by Shri Ashoka Nagrekar; six stone inscriptions; stone sculptures of *yaksha* and *yakshi* and two wooden statues from Miraj; nine paintings (five presented by Shri Balasaheb Shirke); stone sculptures of Ashtabhuja Mahishasuramardini and Garuda presented by Shri M. G. Gulvani.

30. ARCHAEOLOGICAL MUSEUM, KONARAK.—The Museum is being organized in the new building. There will be two galleries, one devoted mainly to sculptures and the other to architectural fragments. The Sculpture Gallery was nearing completion.

31. MUSEUM AND SARASWATI BHANDAR, KOTA.—The Museum acquired a few sculptures from sites in the Kota area and put on display some of the paintings in a newly-constructed show-case.

32. MUSEUM, KULPAK (DISTRICT NALGONDA).—Improvements to this Museum were made constructing a Sculpture Gallery and providing pedestals. New grills were provided for security purposes.

33. STATE MUSEUM, LUCKNOW.—The Museum organized a gallery for the display of recent acquisitions and also introduced a new feature called 'Exhibit of the Month'.

34. GOVERNMENT MUSEUM, MADRAS.—The acquisitions during the year include, among others, five bronzes from Sirukattur, Chidambaram Taluk, District South Arcot; five bronzes from Melnedumbur, Chidambaram Taluk, District South Arcot; one image from Pukkarambai, Pattukkottai Taluk, District Thanjavur; seven bronzes from Krishna-puram, Kumbakonam Taluk, District Thanjavur; one bronze from Varaganeri, Lalgudi Taluk, District Tiruchchirappalli; seven bronzes from Inam-Kolathur, Trichy Taluk, District Tiruchchirappalli; five bronzes from Udayavarkoilpattu, Mayava-ram Taluk, District Thanjavur; four bronzes from Kottarai, Perambalur Taluk, District Tiruchchirappalli; one stone sculpture of Mahavira from Vyasarpadi lake-bund, Madras; two stone sculptures from Karuppur, Mannargudi Taluk, District Thanjavur; one stone sculpture of Subrahmanya from Velankanni, Nagapattinam Taluk, District Thanjavur; and a fragmentary stone inscription from Harur, Harur Taluk, District Dharmapuri. Mention may also be made of the purchase of twenty-one selected wood-carvings from a temple in District Tiruchchirappalli and eight wood-carvings from a temple in District South Arcot. Besides, textile specimens, which were used as accessories in the temples, were purchased from a local dealer. Eight mural paintings representing different stages in the Buddha's life, were added to the collection. Three Pallava sculptures in sandstone were added to the Museum collection through the good offices of the Tahsildar, Kanchipuram.

As a part of general improvements to the Museum, new photographs were exhibited in the New Extension and Jaina Galleries. A map of India showing the distribution of architectural monuments and archaeological sites and containing the details about the sites was provided with lebels. A stone sculpture of Mahavira was exhibited in the Jaina Gallery. The charts depicting the evolution and development of scripts were prepared afresh and re-exhibited. All the modernized show-cases in the Metalware Gallery were provided with cut-out letters.

A special exhibition of a few newly-acquired wood carvings and metal icons was organized.

35. SRIMANTHI BAI MEMORIAL GOVERNMENT MUSEUM, MANGALORE.—Among the sculptures acquired by the Museum during the year may be mentioned a standing figure of Gorakhnath, a small figure of Manjughosha with attendants and a figure of Bhairava. The Museum also acquired two Roman silver coins of Augustus and Tiberius. Some of the bronzes and sculptures in the Museum were provided with pedestals.

36. ARCHAEOLOGICAL MUSEUM, MATHURA.—Among the important acquisitions added to the Museum collection, the following may be mentioned: the lower part of a life-size standing female figure (ht 1-066 x 0-56 m) probably *a yakshi* or a goddess with a dwarfish *yaksha* on either side with a naturalistically rendered blossoming tree, and datable to the first century A.D.; a beautiful *ekamukha Siva.-linga* of the Gupta period in buff coloured stone; and a Buddha head of about second-third century A.D., with *kapirdina* type *ushnisha.*

The labels containing transcription of the inscriptions and their translations in Hindi and English were provided for the inscribed exhibits in the display galleries.

37. STATE MUSEUM, MOUNT ABU.—In the newly constructed building, paintings and sculptures were re-arranged and all the exhibits in the Museum were photographed for documentation purposes.

38. CENTRAL MUSEUM, NAGPUR.—The Museum acquired copper coins weighing 100 kg from Tahsil Chandur, District Nagpur, and two gold and three silver Mughal coins. Besides, the Museum also received thirty coins of the Mughal rulers Akbar, Shah Jahan, Aurangzeb, Farrukh Siyar and Alamgir II and a coin Pratapaditya. Of these, twenty-two coins are of copper, two of gold and six of silver. A sculpture of a Jain *tirthankara* was presented to the Museum by Shri S. Y. More of Erandol. The Museum organized 'Art Week' in February 1967 when an exhibition of paintings was also held.

39. NATIONAL MUSEUM, NEW DELHI.—During the year under review, the Prehistory Section of the Museum acquired a dozen Copper Hoard implements (pi. LV). Excepting the anthropomorphic figure, which was found in a village near Chandausi, Uttar Pradesh, all the tools were collected by Dr. Jagdish Gupta of the University of Allahabad, at Shahabad, District Etah, Uttar Pradesh. The collection includes four harpoons, four flat celts, one shouldered axe, one anthropomorphic figure, one blade of a spear-head (?) and one antennae sword. While all the objects belong to the cetegory of the well-known types, the antennae sword has a special feature noted for the first time. At the base of the blade there are two holes—one on either side of the mid-rib. They were perhaps used for attaching a cover to the hilt. Unfortunately, one projection of the antennae-hilt is missing.

The Museum also acquired a good number of stone sculptures, bronzes and terracottas, by way of gift from private collections and also through purchase. Rani Laxmi Bai Rajwade of Gwalior made a generous donation of a large collection of lamps in addition to some sculptures ranging from the post-Gupta to the modern period. Among the important sculptures donated by her are the dancing Ganesa, Uma-Mahesvara, *lokapala*, a lady looking at a mirror and *surasundari* figures datable between *circa* eighth and tenth centuries A.D. These are now displayed in the Temporary Exhibition Gallery of the Museum.

The Museum also received on loan from the Archaeological Survey of India, thirteen stone sculptures, four crystal objects, etc., from Pitalkhora belonging to the Satavahana Period. Among these, the famous statue *of yaksha*, carved in the round, is a typical example of the second century B.C. The standing corpulent figure, with his hands raised upwards, holds a bowl on the head. The image bears an inscription in Brahmi, which records that it was made by a goldsmith named Kanhadasa; other stone images depict the *mahaparinirvana* of Buddha, a seated royal couple, etc.

The Archaeological Survey of India also gave on loan twelve rare Buddhist specimens of metal sculptures (pl. LVI A), datable to the Vakataka Period *(circa* fourth-sixth century A.D.) discovered from Phophnar, District Nimar, Madhya Pradesh.

Shri K. S. Shukla of Bangarmau (Unnao) presented to the National Museum, an exquisitely fashioned terracotta head of Ardhanarisvara-Siva (pl. LVII A—*circa* fifth century A.D.), from Newal, ancient Navadevakula, in District Unnao, Uttar Pradesh.

Among the recent purchases, a metal image of Vishnu with consorts (pl. LVI B), which is inscribed and gives the name of Mahipaladeva, the Pratihara ruler, is specially noteworthy. Some other Pratihara bronzes, showing standing Vishnu figures and Mahisha-mardini are worthy of note. A small group of Kashmir bronzes, representing Vishnu and Surya, a representation of *abhisheka* of Vishnu (pl. LVII B) and two brass fragments of a door-frame from a Nayaka temple giving the portraits of king Tirumala Nayaka and his queen, are important additions. Among stone sculptures a very important one represents the *abhisheka* of Skanda as Devasenapati i.e., head of the army of gods. Vishnu with additional faces of a lion and a boar is also an elegant specimen of the Gupta Period.

40. PATNA MUSEUM, PATNA.—The Museum acquired the following antiquities during the year: four terracotta figurines and a pot from District Champaran; lower part of a door-jamb of the Pala Period showing a lady standing; a fragmentary image of Seshasayi Vishnu of the Pala Period; a Persian inscription of Sultan Nasiruddin Mahmud of Bengal from Bhagalpur; a Bengali inscription dated Saka 1503 from Srikund, District Dumka; and three protohistoric copper implements from Chakulia, District Singhbhum. While re-organization of the Terracotta Gallery was completed, the setting up of Prehistoric and Bronze Galleries was continued during the year.

41. RAJA KELKAR MUSEUM, POONA.—A number of objects, mainly musical instruments, were acquired by the Museum.

42. ARCHAEOLOGICAL MUSEUM, UNIVERSITY OF SAUGAR, SAGAR.—The following important acquisitions were made during the year: three stone sculptures of early medieval period; one inscribed stone slab bearing a Paramara inscription; a terracotta Kushana head with elongated head-gear; twenty terracottas from Sunet and Kausambi; one Malwa painting; a set of thirty *ragini* paintings; and a wooden Jaina sculpture showing fourteen dreams. To the coin-cabinet were added ten silver coins of the Shahis of Punjab, ten Indo-Greek copper coins, twenty Indo-Sassanian copper coins, twenty Kushana copper coins and twenty-five copper coins from Vidisha and Kausambi.

43. SHRI CHHATRAPATI SHIVAJI MAHARAJ MUSEUM, SATARA.—A new Museum of Maratha History named after Shri Chhatrapati Shivaji Maharaj, was established at Satara in December, 1966.

44. STATE MUSEUM, SRINAGAR.—Among the new acquisitions made by the Museum seven banners in Kashmiri style are more noteworthy. The display of the exhibits received attention particularly in Textile and Decorative Art Sections. The newly set-up Children's Corner has been equipped with modern Museum display material.

45. STATE MUSEUM, TRICHUR.—Various copper *paisas* of Tipu Sultan and Veerarayan *fanams,* discovered earlier from Kasargod and South Wayanad respectively, were acqiured by the Museum. New show-cases were designed for the display of prehistoric artefacts and coins. Objects from different prehistoric sites have been added to the Museum collection.

46. VICTORIA HALL MUSEUM, UDAIPUR.—The Museum acquired during the year a few interesting sculptures. All the sculptures in the Museum were photographed for documentation.

47. VIKRAM UNIVERSITY MUSEUM, UJJAIN.—The collection was enriched by the addition of a broken elephant capital of Asokan Period discovered by Shri V.S. Wakankar in 1954 from Sodhanga, District Ujjain. This is of the same type as at Sankissa and is made of Chunar spotted sandstone and bears traces of Mauryan polish.

Shri Narayan Bhati of Ujjain donated Sunga, Kushana and Gupta terracottas collected by him from the ancient site of Gadhkalika, Ujjain to the Museum.

48. BHARAT KALA BHAVAN, VARANASI.—During the period under review, a number of sculptures, terracottas, seals and, sealings, beads, copper-plates and coins of different periods were acquireds.

Of the forty-five stone sculptures acquired, the most important are two discs with floral designs and animal figures perhaps datable to the Mauryan Period, as is evident from the polish on them. The other significant stone objects are standing Buddha, Vishnu, Siva, Lakulisa in sitting posture, Kubera, Mahishasuramardini, animal and bird figures and some architectural fragments. The important examples include a large number of terracotta female figures belonging to different periods; a man playing on a musical instrument; *sukakrida* scene; a lady with a crown, a lady carying fire; a container and terracotta moulds. Besides these, a number of bricks, spouts, and potsherds were also added to the collection. Among the few seals and sealings, which were acquired, one bearing on one side auspicious symbols like the *svastika* and *nandipada*, and on the other having a legend in Asokan Brahmi is noteworthy. Of the two beads added to the collection, one is of stone having the figure of a stag, ascribable to the Mauryan Period, while the other is of green stone with the figure of peacock and a lion. A copper-plate with an inscription in Deva-nagari script, bearing the date Saka *Samvata* 1617, was also acquired. About three hundred and fifty coins were also collected. These belong mainly to the Mughal rulers, Akbar, Jehangir, Aurangzeb and Akbar II, besides some modern coins.

49. ARCHAEOLOGICAL MUSEUM, VELHA GOA.—The following are the important acquisitions during the year: a beautiful six-faced stone sculpture of Brahma (five of them in the front and the sixth in the rear); an architectural fragment of *makara* of the Hoysala style, with a thick scrolled garland flowing from its mouth in a loop, depicting several human figures; and a model of the Diu fort showing two styles of fortification, the earlier one with round bastions and the later one with the Italian style of heart-shaped bastions.

50. VICTORIA JUBILEE MUSEUM, VIJAYAWADA.—The Museum, which was taken over by the Government of Andhra Pradesh in 1963 from the Zila Parishad, Krishna, has now been re-organized on scientific lines resulting in improved display.

VII. ARCHITECTURAL SURVEY OF TEMPLES

SOUTHERN REGION.—The Temple Survey Project, Southern Region, under Shri K. V. Soundara Rajan, completed the report on the cave-temples of the Deccan under the Chalukyas, Rashtrakutas and others. Dealing with ninety-five monuments, this report would bring together, for the first time, all the known, less-known and some unknown examples of cave-architecture created under the patronage of the various dynasties of the Deccan. The chief among these dynasties were the Chalukyas (both Eastern and Western) and the Rashtrakutas, although less powerful dynasties like Kadambas and Mauryas were also involved.

Side by side with this, a detailed study of the five monolithic creations of the Rashtrakutas in Ellora has been taken up. This study would present the pseudo-structural formulations—frozen, as it were, in stone—initiated by the Rashtrakutas at a time when structural architecture in stone media had already made considerable progress in the Deccan under the Chalukyas. The setting represented by them, thus, is most conducive, not merely in taking stock of what had gone before in structural style, but also in understanding or anticipating what was to follow. It should be mentioned also that of the five monolithic examples at Ellora, having a time-range from about the third quarter of the eight century A.D., to the middle of the ninth century A.D., the three major ones, namely, the great Kailasa, the Chaumukh and the gateway of Indra-sabha cave, and the Chhota Kailasa represent compact and closely following stages of development. Simultaneously, with the above study, the analysis of the data concerning Pandyan, Muttaraiyar, Chera and other cave temples, south of Tondaimandalam in Tamil Nadu, has also received attention, and the field data which have been collected and correlated have only to be finally checked at site. These involve approximately sixty monuments and cover a time-span from about the last quarter of the seventh century A.D., to almost the first quarter of the ninth century A.D.

As in previous years, a corresponding survey of early structural temples, not merely of the Chalukyas in the Deccan, but also of the Pandyas, Muttaraiyars, Irukkuvels, Cholas and others in the Tamil country, has been undertaken and some progress in data-collection has been made.

In the course of the field studies some monuments of outstanding importance were noticed. One of these is the Tiruttalisvara temple in stone at Tiruppattur, District Ramana-thapuram. This is perhaps one of the best preserved—but hardly noticed except for its inscriptions—early Pandyan temples, completely intact from the plinth to the *stupi.* Bearing inscriptions of the second half of the ninth century A.D., it represents a landmark in the Pandyan structural style from its still earlier beginnings as seen at Ukkirankottai in the south Pandyan country and elsewhere. Two interesting features of this temple may be noted. First, is the occurrence of the *karnakutas* on the very top floor *vedi* of this *dvitala* temple, without, however, the *madhyasala sikharas.* As we know, this feature appears for the first time in Tondaimandalam and the Chola country only from the time of Rajendra and is carried up to the time of Rajadhiraja as in the temples at Kulampandal, near Kanchi-puram, Darasuram (Darasaram), Tribhuvanam (Tiruppuvanam), etc., and has been noticed on the north-eastern flank, presumably of the time of the Eastern Chalukyas, at Srikurmam in District Visakhapatnam. The other feature is the display of *makara-toranas*

on the lintel at the entrance to the main original unit of the temple and again at the entrance into the *garbhagriha.* This adoption of *torana* entrance is perhaps not seen elsewhere, but has been found occurring in some Pandyan and Pallava cave-temples.

The Pudukkottai region, now forming southern part of the District Tiruchchirappalli, has itself been an important centre for the dissemination of early architectural enterprises under the Pandyan influence, by the local Muttaraiyar rulers who were subordinate to the Pallavas but asserted their independence from time to time in their area. There is a series of early structural attempts, noticed earlier *[1965-66,* p. 106) to which should be added the only known early structural temple dedicated to Subrahmanya in this area at Kannanur and the Uttamadanisvaram temple at Kiranur. The latter bears an inscription of one of the Muttaraiyar kings by name Ilango, quoted in his own thirteenth year. It would seem that one of the titles of this king was Uttamadani, as known already from his inscriptions in the Chola country, and in his own home region the Siva temple at Kilattanaiyam (pl. LVIII) in the Tirumayam Taluk, also called Uttamadanisvaram, would seem to be architectural part of the same early structural series in this region. The most important temple in this area undoubtedly is the well-known and so-called Vijayalayacholisvaram at Narthamalai, which, on consideration of important epigraphical data in the temple itself pertaining to the Muttaraiyar king mentioned above, and as related to other epigraphical and architectural data at Narthamalai and elsewhere, would clearly be anterior to the Vijayalaya line, and is a creation (and a subsequent renovation as well) of the Muttaraiyars. This analysis and interpretation help us to understand the other early structural temples in this area, till now called 'early Chola' temples, in their true perspective.

Another similar fresh study pertains to the famous Muvarkoil group of temples at Kodumbalur built by Budivikramakesari, the Irukkuvel Chief, another important local chief, who on recent epigraphical evidence, would be contemporary with the Pallava Nandivarman III in the earlier part, and perhaps with Aditya I Chola towards the latter part of his life. The architectural features of this group are convincingly related to several other temples in this region (south and north of the Cauveri) and introduce the distinctive architectural characteristics of structures, associated with Irukkuvels. This local dynasty was somewhat allied politically with the Cholas, but architecturally chose a different mode of expression, nearer to the Pandyas. The Cholas appear to have absorbed, in the ultimate analysis, the style adopted by the Muttaraiyars, who ruled over the delta country before the Cholas.

An important temple on the Vellar bank in District South Arcot, ascribable to the early period of the Pallavas and the age of Saivaite Nayanmars, is the unique apsidal Pralayakalesvara temple (pl. LIX) at Pennagadam (Pennadam), south of Vriddhachalam. The temple is the only one of its kind having three projecting porch-windows in the cardinal points of the *garbhagriha,* as carried from the plinth to the single storeyed apsidal *sikhara,* which would justify the title *tunganaimadam* in early literature to this special feature allied to the *mattavarana* of northern *Silpa* texts. This temple has the additional interesting feature in the form of a square *linga-pitha in* the sanctum and an elliptical-sectioned *phalaka linga* on it, both connoting reasonably early foundation for the temple. It is perhaps one of the southernmost apsidal temples known so far, and in its present form with its stone structural ground *tala* and brick and stucco superstructure is datable to the close of the ninth century A.D.

A close examination of the well-known Pandya cave-temples at Tirupparangunram revealed the following important features, not noted hitherto.

(i) The main cave has, in its shrine of Siva facing east, the *linga* and its *pitha* of a portable type, consecrated there subsequent to the carving of this cave with the figure

of Somaskanda on the back wall. Presumbly, it is this consecration that has been mentioned in the Sanskrit inscription found over the lintel of the Durga sub-shrine here, and, if so, it would make the cave itself relatively earlier than the foundation of the *linga.*

(ii) Along the western outer rock scrap of this, now covered by a building-chamber, is found a panel, representing Uma-sahita Siva, facing east.

(iii) The disposition of the sub-shrines, adjoining the main cave temple, in the form of a shrine for Gajalakshmi on one side, a shrine for Jyestha further below and a shrine for what is taken to be Bhuvanesvari, recalls a similar usage of Lakshmi and Sarasvati as sculptural panels outside the sanctum in the late Chalukyan and early Rashtrakuta cave-temples at Ellora.

(iv) In the case of the Umaiyandar cave on the north face of the hill, the absence of any *linga* or evidence therefor in the sanctum, coupled with the carving of an Ardhanari-svara relief on the back wall (to which a *rishabha* has been added at a slightly later stage in relief), would show that this temple is also likely to be of a fairly early stage, perhaps pertaining to the time when the main Tirupparangunram cave did not have the *linga* properly consecrated there. The side shrine, set up here at right angles to the fagade, of the cave proper in this instance, would also seem to recall the earliest known analogy for this layout in the Pallava cave-temples at Dalavanur and the upper rock-cut cave at Tiruchchirappalli.

Among the important sculptures, discovered during the survery in the current year, may be mentioned the unique two-armed image of Vishnu seated in the *padmasana* pose, with the hands resting upon the thigh and with features quite akin to the early Pallava form though of the Pandyan origin, as found now in one of the sub-shrines in the *prakara* of the Tiruttalisvara temple at Tiruppattur, District Ramanathapuram. Its simplicity of style, limited ornamentation and other features make it one of the earliest known Pandyan sculptures, used in structural temples, datable around the middle of the ninth century A.D. This sculpture is, in fact, a member of a group of three, of which the other two are Bhudevi, seated in *padmasana* and a seated *rishi,* most probably Bhrigu, all found together here. The original provenance of these sculptures is not known, although they are most likely to form one group and belonging to one of the ruined temples of this very town. A relatively later standing image of Vishnu of the Pandyan period, originally said to have formed part of the ruined Vishnu shrine at Thenur, District Madurai, is noteworthy. Ascribable to the late ninth century A.D., or slightly after, this sculpture is of almost life-size.

A third interesting sculpture is the main *tnukha-linga* figure in the sanctum of the Chandramaulisvara temple at Tiruvakkarai, District South Arcot. This *mukhalinga* has only three faces, the back side being plain. All the three faces of this *mukhalinga* are of the same type, unlike the usual diversification of the faces in such images. The temple in which it is found is approximately datable to the ninth century A.D., or slightly earlier. In this very temple there is a unique group of Saptamatrikas, consecrated in a separate shrine, and presided over by Vakrakali or Chamunda, in more than life-size form placed in the centre, with the *matrikas* flanked equally on either side, and with seated Siva in *yogasana* pose at one end, and Ganesa at the other. The figure of Kali, seated in *virasana* pose is stylistically related to the sculptures from the Mahadeva temple at Takkolam (between Kanchipuram and Arkonam) in District North Arcot.

Among other sculptures particularly noteworthy is an image of a four-armed goddess, seated in *yogasana* pose, with the fingers in different *yogic mudras,* found amidst the loose sculptures at Kodumbalur (now in a sculpture-shed adjoining the Muvar Koil monument). It recalls strongly the early Pandyan sculptures of a similar character found at Ukkiran-kottai, suggesting thereby the existence of impacts between these two areas.

VIH. PRESERVATION OF MONUMENTS

MONUMENTS OF NATIONAL IMPORTANCE

CENTRAL CIRCLE

Madhya Pradesh

1. BHOJSALA, DHAR.—Vegetation over and around this structure was cleared.

2. LAT-KI-MASJID, DHAR.—The monument was cleared of all the vegetation and *murum* was spread over pathways.

3. GROUP OF MONUMENTS, MANDU, DISTRICT DHAR.—The walls of various monuments, particularly Gadashah Palace, Hindola Mahal, Jami Masjid, Ashrafi Mahal, Kapur Tank, etc., were repaired besides filling-up of the open masonry joints, and water-tightening of the crevices.

4. MOSQUE, ASIRGARH, DISTRICT EAST NIMAR.—The bulged and broken faces of the minaret were made good with plain and moulded ashlar masonry similar to the original.

5. PALACE, FORT, BURHANPUR, DISTRICT EAST NIMAR.—The surroundings including the garden inside the monument were kept in order.

6. KHUNI DARWAZA, CHANDERI, DISTRICT GUNA.—The fallen portions of the facade were repaired.

7. TOMB OF MUHAMMAD GHAUS, GWALIOR.—The work of restoring the broken roof-slabs over the varandah was completed.

8. FORT, RAISEN.—The work of removing debris from inside the rooms of Rani Mahal was completed and the original floor-level exposed.

9. BUDDHIST MONUMENTS, SANCHI, DISTRICT RAISEN.—The monuments were cleared of the vegetation. Minor repairs like pointing and underpinning the dome were carried out to keep the fabric intact.

10. HELIODOROS PILLAR, BESNAGAR, DISTRICT VIDISHA.—The portion of the platform that had been removed during excavation around the pillar was made good. The compound wall, originally built in mud mortar, was strengthened by plastering with cement mortar.

EASTERN CIRCLE *Orissa*

11. BARBATI FORT, CUTTAGK.—Besides jungle clearance, certain other minor repairs were carried out.

12. MONASTERY NO. 1, RATNAGIRI, DISTRICT CUTTACK.—The decayed and dislodged brick masonry was re-laid with old bricks using lime cement mortar, and the top was made watertight.

West Bengal

13. DALMONDAL GUN, BISHNUPUR, DISTRICT BANKURA.—A cultural notice board was fixed.

14. KALAGHAND TEMPLE, BISHNUPUR, DISTRICT BANKURA.—An approach road along with a stone gateway was provided.

15. NANDALAL TEMPLE, BISHNUPUR, DISTRICT BANKURA.—The damaged vaults were repaired. The roof and floor of the temple were re-laid with lime concrete.

16. RASAMANCHA, BISHNUPUR, DISTRICT BANKURA.—The work of rebuilding the fallen vaults was carried out.

17. BASUDEV TEMPLE, BANSBARIA, DISTRICT HOOGHLY.—The decayed plinth of the temple was repaired with lime-cement mortar. Rank vegetation was removed and cracks and open joints filled in with recess-pointing.

18. MOSQUE, PANDUA, DISTRICT HOOGHLY.—The dislodged stone pillars were re-set and salt affected bricks were replaced. Besides pointing of the open joints, the accumulated debris around the mosque was also removed.

19. TOMB AND MOSQUE OF ALIVARDI AND SIRAJU'D-DAULA, KHOSHBAGH, DISTRICT MURSHIDABAD.—The damaged brickworks were repaired and the salt-affected plasters removed and plastered afresh. The damaged wooden doors were renewed. The leakage of rain-water from the roof was also made good.

20. EXCAVATED SITE, RAJBADIDANGA, DISTRICT MURSHIDABAD.—Excavated brick structures were made watertight, and open joints recess-pointed. Proper slope was given for the drainage of water from the site.

FRONTIER CIRCLE

Jammu and Kashmir

21. BUDDHIST MONASTIC-COMPLEX, HARWAN, DISTRICT SRINAGAR.—The diaper masonry wall of the *chaitya* in the Buddhist monastic-complex at Harwan, situated about

19 km to the north-east of Srinagar had partly collapsed due to heavy rains. These walls, which were laid in mud mortar, were restored.

22. GROUP OF TEMPLES, WANGATH, DISTRICT SRINAGAR.—The temple-complex of Wangath, about 54-71 m to north-west of Srinagar lying *en route* to Haramukha, which could not be attended to previously because of difficulties of access, was taken up for conser vation work. As a preliminary measure the area was cleared of jungle growth and the dfebris accumulated through the centuries. As a result, the monuments which were mostly hidden from view can now be seen.

23. MEDIEVAL TEMPLES, BABOR, DISTRICT JAMMU.—The facade of the medieval temples at Babor which had either collapsed or was out of plumb, was redone up to a height of 1-21 m.

MID-EASTERN CIRCLE

Bihar

24. BUDDHIST STUPA, KESARIYA, DISTRICT CHAMPARAN.—To avoid encroachment to the archaeological area, barbed wire fencing was provided.

25. EXCAVATED REMAINS, NALANDA, DISTRICT PATNA.—General clearance was done at the site.

Uttar Pradesh

26. EXCAVATED REMAINS, KUSINAGAR, DISTRICT DEORIA.—Besides watertightening the Nirvana-5fapa, weeds and vegetation were removed from the excavated remains and theR b h

27. DHARAHARA MOSQUE, VARANASI.—The cracks appearing on the dome of the mosque and the roof were grouted with thin lime and cement mortar by hand-pump. The decayed lime plaster, averaging about 76 cm thick over the dome of the mosque, was dismantled and re-laid with fresh lime-plaster matching with the old fabric and thickness.

28. EXCAVATED REMAINS, SARNATH, DISTRICT VARANASI.—Besides clearing the site of weeds and vegetation, lavatory blocks including sanitary fittings were provided for the visitors.

NORTHERN CIRCLE

Madhya Pradesh

29. MATANGESHVAR TEMPLE, KHAJURAHO, DISTRICT CHATTARPUR.—The work of repairs consisted of the dismantling of the raised and sunken stone floor of the *mandapa* and re-setting the same in position after laying concrete bed below, watertightening the temple by pointing of the open joints and cement grouting wherever necessary. Besides,

the work of providing fencing around the newly-acquired area to the west of the Kandariya Mahadeva temple was completed.

Rajasthan

30. FORT-WALL, BHARATPUR—Repairs were carried out to the wall apart from underpinning the patches of rubble stone masonry on the southern entrance-gate of the fort and the removal of vegetation. The work is in progress.

Uttar Pradesh

31. AGRA FORT, AGRA.—The courtyard of the Moti Masjid inside the fort had sunk at places and the marble used in the structure had also decayed and was broken at a number of places. After dismantling and laying a fresh concrete bed below the defective portion of the courtyard, it was re-laid and the damaged stones were replaced by new ones. The red sandstone beams of the room on the first floor near the entrance to the courtyard of the Jahangiri Mahal were cracked and overhanging. These were replaced by new ones and lime concrete was laid over the roof. The Ghazni Gate inside the fort was badly decayed and affected by white ants, etc. The moulded and richly-carved panels and borders which had been decayed and eaten away by white ants were replaced by new ones, and a coat of wood preservative was given.

32. TAJ MAHAL, AGRA.—In continuation of the earlier work {*1965-66,* p. 116) the work of raising the sunken portions of the red sandstone pavement in front of the Mihman-Khana and the causeways was completed. Besides, the works of constructing the cement concerete drain around the forecourt of the Taj Mahal, filling of the open joints in the brickwork wall of the Khan-i-Alam Bagh towards the river to the west of the Taj Mahal were completed.

33. FATEHPUR SIKRI, DISTRICT AGRA.—A portion of the city wall near the Agra Gate (towards south from the Agra Gate) which had collapsed due to heavy rains was re built matching the original. The wide and deep cracks on the top of the wall were also grouted with lime cement mortar.

34. FORT, KALINJAR, DISTRICT BANDA.—The repairs consisted of underpinning the stone masonry of the gateways, filling in of the open joints of stone masonry, re-setting the loose stones in the temple and the removal of grass and vegetation from the structures inside the Fort.

35. RUDRNATH TEMPLE, GOPESHWAR, DISTRICT CHAMOLI.—In continuation of the work of reconstructing the collapsed and out of plumb masonry of the *sikhara,* underpinning patches of stone masonry, laying flagstone flooring around the temple and changing decayed wooden pieces of the *chhatri* on the top were completed.

36. MOSQUE OF MAKHDUM JAHANIAN, KANAUJ, DISTRICT FARRUKHABAD.—The work *(1965-66,* p. 117) of reconstructing the collapsed portion of the wall on the west side, changing worn-out and decayed stones on the west of the mosque face by fresh stones after chiselling out old stones was completed.

37. RADHABALLABH TEMPLE, VRINDABAN, DISTRICT MATHURA.—The repairs consisted of taking out and re-setting the heavy stones of the gabled roof in position providing proper slope filling in the open joints on the roof, supporting cracked beams with masonry pillars and painting the doors and windows etc.

NORTH-WESTERN CIRCLE

Delhi

38. JAMI'-MASJID, DELHI.—Ornamental pieces of red sandstone and white marble were inserted replacing the damaged ones in the arches of the main entrance as well as the inner face of the western wall of the prayer-hall. Other works included grouting and pointing of the joints of the marble pulpit, besides extensive repairs.

39. PURANA QILA, DELHI.—Special repairs for the restoration of the fort wall are in progress.

40. RED FORT, DELHI.—Special repairs to the wooden ceiling of the Diwan-i-Khas, involving delicate and careful joinery, were executed. The damaged and missing marble slabs on the floor of Diwan-i-Khas were replaced.

Himachal Pradesh

41. KANGRA FORT, DISTRICT KANGRA.—The work of plastering and edging the *hammam* of the Mughal period at the foot of the fort was completed.

Punjab

42. FORT, BHATINDA, DISTRICT BHATINDA.—Special repairs to the eastern wall of the fort which had been damaged due to heavy rains are in progress; the wall has been rebuilt to a height of 12 m on the exterior and 6 m on the interior.

Rajasthan

43. NEELKANTHA TEMPLE, GARH, DISTRICT ALWAR.—A sculpture-shed for the display of important sculptures, collected from the site, was built.

44. EXCAVATED SITE, KALIBANGAN, DISTRICT GANGANAGAR.—The exposed structures were covered with alkathene sheets. Besides, the sections in the deep trenches and structures were given support with corrugated iron sheets on wooden frames.

45. PUNDRIKJI-KI-HAVELI, DISTRICT JAIPUR.—A staircase was provided for access to the first floor in the recently acquired Pundrikji-ki-Haveli which also contains paintings.

SOUTHERN CIRCLE *Madras*

46. CLIVE'S BUILDING, FORT ST. GEORGE, MADRAS.—A portion of the old porous leaky roof over the first floor was water tightened. Broken window-shutters were replaced with new ones on the eastern side at the gound floor-level. The false wooden ceiling of the north-east entrance room of the ground floor which had decayed was replaced by a new one.

47. SIVAGANGA LITTLE FORT, THANJAVUR —Foundation concrete was laid after bailing out the water in the moat for the reconstruction of the fallen fort bastion walls on the western side. Underpinning of brickwork was done at several places on the northern side of the rampart wall.

48. ERUMBESVARA TEMPLE, TIRUVERUMBUR, DISTRICT TIRUCHCHIRAPPALLI.—The work of reconstruction of the fallen stone masonry of the retaining block of the ascending steps and the top landing, which had collapsed completely during the cyclone, was taken up.

Mysore

49. TIPU SULTAN'S PALACE, BANGALORE.—All the recently-fixed new wooden members were suitably painted. Patch plastering works on the walls and ceiling was done on the western side of the palace, both in the ground and first floors.

50. DARIA DAULATBAGH, SRIRANGAPATNA, DISTRICT MANDYA.—The work of water-tightening the palace terrace containing ancient paintings underneath was taken up after dismantling the top layers of the old leaky terrace. The work is in progress. Simultaneously, the water outlets fixed over the lean-to roof on all the four sides of the terrace have been repaired to enable free flow of rain water.

51. SRI RANGANATHASVAMI TEMPLE, SRIRANGAPATNA, DISTRICT MANDYA.—Water-tightening at a few places over the *mukha-mandapa* was done by laying fresh concrete and plastering. The flooring of the *pial* at the south-east corner of the temple, near the entrance, was re-done. Four window shutters with frames were fixed in place of old broken ones in the room on the north-east corner of the temple.

Kerala

52. MATTANCHERRY PALACE, COCHIN, DISTRICT ERNAKULAM.—Brass railing as per approved design was fixed in the painted gallery to keep the visitors away from touching and damaging the murals.

SOUTH-EASTERN CIRCLE

Andhra Pradesh

53. HILL-FORT AND OTHER STRUCTURES, RAYADURG, DISTRICT ANANTAPUR.—Protection Notice Boards as per the approved design were put up at four different places of the fort.

54. RAJA AND RANI MAHALS, CHANDRAGIRI, DISTRICT CHITTOOR.—Pointing and patch plastering at various places in the third floor of the Raja Mahal and on the walls and floors in cement mortar (1:3 ratio), besides the maintenance of the garden in front of the Mahal, was attended to. Besides, the joints of the fort-walls were repaired in cement mortar of 1:3 ratio.

55. BUDDHIST REMAINS, AMARAVATI, DISTRICT GUNTUR.—The remains were made neat and tidy, after attending to general clearance.

56. MONUMENTS AT THE HILL-TOP, NAGARJUNAKONDA, DISTRICT GUNTUR.—The following items were executed during the period under review:

(i) resetting the disturbed bricks and stones of the platforms and repairs in coloured cement mortar to the edges of masonry walls with old bricks and stones available at the site;

(ii) repainting of the stone direction boards of the reconstructed monuments;

(iii) repainting of the wooden staircase in brick colour leading to the *Mahastupa;*

(iv) general clearance of monuments like the Bathing Ghat, Megalith, Monastery, *Chaitya-griha, Mahastupa* and *Chaitya, Asvamedha-site* and *Svastika-shaped stupa;* and

(v) clearance of the vegetation around the monuments.

57. FORT-WALL ON HILL-TOP, NAGARJUNAKONDA, DISTRICT GUNTUR.—Dismantling of the masonry cisterns at the reconstructed monument was done and the area levelled to impart a good look. The rubble masonry walls between the second and third enclosures were restored to a height of 1-82 m to hide the buildings in the third enclosure.

58. RECONSTRUCTED MONUMENTS, 11/2 MILESTONE, UNIVERSITY SITE, NAGARJUNA KONDA, DISTRICT GUNTUR.—R. C. C. posts were cast and barbed wire was provided for fencing off the area of reconstructed monument.

59. GOLKONDA FORT, GOLKONDA, DISTRICT HYDERABAD.—The paved way inside the fort and the main entrance gate of the fort, Balahisar, were cement-pointed. Fine lime mortar plastering was done to the walls of the main gate where it had weathered and had fallen off. The stone-facing of the platforms in the garden (Nagina Bagh), which had fallen and tilted, was re-set in position. A portion of the old boundary wall to the south of the office building was restored.

60. CHARMINAR, HYDERABAD.—Broken *jali-work* which was put up in the past was repaired in reinforced concrete to close the unsafe spots in the *minars.*

61. ROCK-CUT CAVES, AKKANNA-MADANNA, VIJAYAWADA, DISTRICT KRISHNA.—The laying out of the garden was completed.

62. UMA-MAHESVARA TEMPLE AND CAVES, YAGANTI, DISTRICT KURNOOL.—The damaged portions of the retaining wall along the steps to the ancient caverns have been completely restored in R. R. masonry in mud mortar with coping slabs pointed in cement mortar.

63. PAPANASI GROUP OF TEMPLES, ALAMPUR, DISTRICT MAHABUBNAGAR.—General clearance work was done at the site by the removal of broken stones and loose slabs between temples and stacking them neatly along the compound-wall of the group of temples.

SOUTH-WESTERN CIRCLE

Maharashtra

64. ROCK-CUT CAVES, AJANTA, DISTRICT AURANGABAD.—In Cave 1 the existing A. C. troughs, through which water percolated, were replaced with the stainless steel ones. In the same cave, the rock-surface was chiselled and the drain was sloped off on both sides for easy flow of water.

65. RAIGAD FORT, DISTRICT KOLABA.—The cisterns were de-silted and the extensive buildings were cleaned of heavy and thick vegetation. Repairs were also undertaken to pathways. The work is in progress.

66. SHANWARWADA, POONA.—Repairs to the western fortification of Shanwarwada, which was heavily damaged by the floods during 1961, were continued.

Mysore

67. GOL GUMBAD, BIJAPUR.—The building in front of the Gol Gumbad, now serving as a museum, was taken up for repairs. Open joints on its interior were raked and filled, and the surface was given a coat of plaster. The work is in progress.

68. GROUP OF MONUMENTS, AIHOLE, DISTRICT BIJAPUR.—In order to improve the surroundings of the monuments, some land, including modern houses, was acquired. Work on dismantling of the houses was taken up and is in progress.

69. GROUP OF MONUMENTS, PATTADKAL, DISTRICT BIJAPUR.—Land and houses around the monuments were acquired to improve the surroundings of the monuments.

WESTERN CIRCLE

Gujarat

70. EXCAVATED REMAINS, LOTHAL, DISTRICT AHMADABAD.—In the acropolis area, the mud-brick platform was retained partly with cement bricks, toned to the original texture, on the top in the western and eastern sides and the resulting gap filled with earth.

71. GROUP OF MONUMENTS, SARKHEJ, DISTRICT AHMADABAD.—Sundry repairs to the stone flooring at the Rauza of Khattu Ganj Baksh were carried out. New copper tapes were fixed for the lightning conductor up to the finial in this monument.

72. HAZIRA, DANTESHWAR, DISTRICT BARODA.—Around the lower basement plinth, dry brickbat flooring was laid to keep the structure free from moisture. Further work is in in progress.

73. HIRA GATE, DABHOI, DISTRICT BARODA.—The terrace of the main gateway roof was watertightened with fresh course of lime concrete, laid in brick jelly.

74. DURVASA RISHI ASHRAM, PINDARA, DISTRICT JAMNAGAR.—Large-scale removal of debris resulted in the exposure of the underground cells, and also the extant portions of the original *mandapa* and porches. Strengthening of these structures is being taken up.

75. DWARKADHISH TEMPLE, DWARKA, DISTRICT JAMNAGAR.—Loose cornice or *chhajja* stones were strengthened by re-fixing and pointing the joints in all the floors. Dangerously hanging stones were removed from site and the holes plugged with coloured cement mortar.

76. KHAPRA KODIA CAVES, JUNAGADH, —The pitted flooring was made even and presentable by filling up the holes with coloured concrete matching with the flooring around.

77. RANI-KA-VAV, PATAN, DISTRICT MEHSANA.—Further debris was cleared from the well as well as from the main shaft, exposing the sculptured and structural portions of the complex. The work of strengthening the side wall was also undertaken by utilizing the stones available from the site.

78. SUN TEMPLE, MODHERA, DISTRICT MEHSANA.—Missing stone slabs over the brick platform on the south are being laid with Dhrangadhra stone in lime cement mortar.

79. SITALAMATA TEMPLE, PILLUDARA, DISTRICT MEHSANA.—Extensive clearance of vegetation around the structure was done and provision was made for draining out the storm water.

80. TORANA OF SURYA TEMPLE, PILLUDARA, DISTRICT MEHSANA.—Clearance of vegetation was done around the monument.

81. DUTCH AND ENGLISH CEMETERY, SURAT.—The open joints of masonry were pointed and plastered with lime cement mortar matching with the original. The woodwork was given a coat of preservative.

Rajasthan

82. KHATAN-VAV, FORT, CHITORGARH.—The walls surrounding the well had become loose with gaping joints throughout. Reconstruction of these out-of-plumb walls was under taken in ashlar masonry. Plugging the deep holes and pointing the masonry were also resorted to. The work is in progress.

83. SALUMBER HOUSE, FORT, CHITORGARH.—The removal of debris brought to light the original rubble masonry. The masonry walls were strengthened *in situ* by using suitably coloured cement lime mortar. Watertightening the extant tops of walls was also done.

84. TOPKHANA BUILDING, FORT, CHITORGARH. The mud flooring was repaired and flagging with stones to withstand the weight of sculptures proposed to be housed therein was undertaken.

85. EASTERN GROUP OF MONUMENTS, MENAL, DISTRICT CHITORGARH.—As a result of large-scale jungle-clearance and removal of trees, the outer structures of the temple-complex have now been exposed to view. Uneven flooring inside the courtyard was dismantled and levelled up for repairing and relaying the pavement.

MONUMENTS MAINTAINED BY STATES

ANDHRA PRADESH The

following monuments were declared as protected:

86. OLD GATE, DABEERPURA, HYDERABAD.

87. PANDVULAMATTA RAMPA-YARRAMPALEM VILLAGE, RAJAHMUNDRY TALUK, DISTRICT EAST GODAVARI.

88. CHATURMUKHA BRAHMA TEMPLE, CHEBROLU, TENALI TALUK, DISTRICT GUNTUR.

89. VIRABHADRASVAMI TEMPLE, PHIRANGIPURAM, DISTRICT GUNTUR.

90. NAGARESVARASVAMI TEMPLE, PENUGONDA, TANUKU TALUK, DISTRICT WEST GODAVARI.

Repairs were carried out at the following monuments and sites:

91. MEGALITHIC SITE, HASHMATPET, DISTRICT HYDERABAD.

92. MEGALITHIC SITE, SINGAPUR, DISTRICT KAREEMNAGAR.

93. CHAYASOMESVARA TEMPLE AND PACHAIA SOMESVARA TEMPLE, PANGAL, DISTRICT NALGONDA.

94. NARASIMHA TEMPLE AND DARBAR HALL, RAJKONDA FORT, DISTRICT NALGONDA.

95. KHAZANA BUILDING AND SHAMSHEERKOTA MONUMENTS, GOLKONDA, DISTRICT HYDERABAD.

96. TOMBS OF SULTAN MUHAMMAD QUTB-SHAH AND MUHAMMAD QULE QUTB-SHAH, QUTB-SHAHI TOMBS, HYDERABAD.

97. ENCLOSURE WALL, QUTB-SHAHI TOMBS, HYDERABAD.

ASSAM

The Archaeological Department put special emphasis on the repair and preservation of old monuments, as quite a few of them required urgent attention. Given below is a brief description of the works done by this Department during the period under review:

98. ROCK-INSCRIPTION, KANAI BOROSI, DISTRICT GAUHATI.—Of the three inscriptions, located in the Kanai Borosi area at north Gauhati, the oldest one, dating back to A.D. 1127, which had been covered with earth and thick shrubs, was cleared and the inscription uncovered by removing the earth and the thickets up to a depth of over 1 m, thereby bringing the inscription to the eye-level. The site was thereafter levelled and the retaining walls were built to check further landslides. An approach road with a flight of steps was also constructed and all the three inscriptions were provided with R. C. C. sheds to protect them from the elements.

99. SIVA TEMPLE, CHATRAKAR, GAUHATI, DISTRICT KAMRUP.—The cracks which had developed on the body of the temple and the weathered masonry of the walls were repaired. Over the roof of the temple A. C. C. sheet roofing (not visible outwardly) was provided to prevent rain-water from entering the *garbha-griha.*

100. UMACHAL ROCK-INSCRIPTION, KAMAKHYA, DISTRICT KAMRUP.—An R. C. C. shed was constructed together with a flight of steps and a platform just below the inscription, providing facilities for easy approach to and the inspection of the inscription.

101. CHANDRASEKHARA TEMPLE, UMANANDA, GAUHATI, DISTRICT KAMRUP.—Vegetation over the dome which had extended to the entire structure, resulting in vertical cracks, was removed. The cracks and the dismantled portions of the masonry were then repaired, using old bricks. The finished surface was thereafter made watertight.

102. PINGALESVARA TEMPLE, DISTRICT KAMRUP.—The sculptures lying scattered around the Pingalesvara temple, 48 km away from Gauhati, were collected and displayed on a platform.

103. RAIDONGIA TEMPLE, DIBRUGARH, DISTRICT LAKHIMPUR.—This temple, located about 40 km from Dibrugarh, was throughly weather-worn and enveloped by vegetation, with deep vertical cracks both inside and outside. The brick masonry of its *sikhara* had almost collapsed due to the decayed old mortar. Besides, the *garbha-griha* was filled with fallen brick debris. To begin with, the jungle growth was cleared, the dome thoroughly grouted after felling the trees, the cracks repaired and the *garbha-griha* cleared of debris.

104. DOLMENS, SILSANG, DISTRICT NOWGONG.—A wire-fencing was thrown round the dolmens lying beside the Assam Trunk Road, about 73 km from Gauhati towards Nowgong. The ground surface was also partly levelled.

105. GALLOWS-SITE OF THE LATE PIYALI PHUKAN, SIBSAGAR.—The gallows site of the late Piyali Phukan, the Assamese martyr during the 1857 mutiny, was protected and a wire-fencing was erected around the mound where Piyali Phukan was hanged.

GUJARAT Repairs were carried out at the following monuments:

106. SATA SHERI, SHIHOR, SHIHOR TALUK, DISTRICT BHAVNAGAR.

107. KUNDA AND TORANA, K.APADVANJ, KAPADVANJ TALUK, DISTRICT KAIRA.

108. PAGATHIYAVALI-VAN, MAHEMDABAD, MAHEMDABAD TALUK, DISTRICT KAIRA.

109. UPARKOT, JUNAGADH, JUNAGADH TALUK, DISTRICT JUNAGADH.

110. JAINA TEMPLE, PRABHASPATAN, VERAVAL TALUK, DISTRICT JUNAGADH.

111. JAINA TEMPLE, ABHAPUR, VIJAYNAGAR TALUK, DISTRICT SABARKANTHA.

112. SIVA-SAKTI TEMPLE, ABHAPUR, VIJAYNAGAR TALUK, DISTRICT SABARKANTHA.

113. JAINA TEMPLE-COMPLEX, ANTARSUBA, VIJAYNAGAR TALUK, DISTRICT SABAR KANTHA.

114. SIVA PANCHAYATANA TEMPLE, ANTARSUBA, VIJAYNAGAR TALUK, DISTRICT SABARKANTHA.

115. SIVA TEMPLE, ANTARSUBA, VIJAYNAGAR TALUK, DISTRICT SABARKANTHA.

116. SAIVA TEMPLES, ANTARSUBA, VIJAYNAGAR TALUK, DISTRICT SABARKANTHA.

117. PAGATHIYAVALI-VAV, CHORIVAD, IDAR TALUK, DISTRICT SABARKANTHA.

118. PAGATHIYAVALI-VAV, IDAR, IDAR TALUK, DISTRICT SABARKANTHA.

119. HARISCHANDRA-NI-CHORI, SHAMLAJI, BHILODA TALUK, DISTRICT SABARKANTHA.

120. SIVA TEMPLE, SHAMLAJI, BHILODA TALUK, DISTRICT SABARKANTHA.

121. SIVA TEMPLE, SHAMLAJI, BHILODA TALUK, DISTRICT SABARKANTHA.

122. PAGATHIYALI-VAV, SHAMLAJI, BHILODA TALUK, DISTRICT SABARKANTHA.

123. MADHA-VAV, WADHAVANA, WADHAVANA TALUK, DISTRICT SURENDRANAGAR.

KERALA

124. THRIKKUR MAHADEVA TEMPLE, THRIKKUR, MUKUNDAPURAM TALUK, DISTRICT TRICHUR.

125. VIZHINJAM BHAGAVATHY TEMPLE, KOTTUKAL, NEYYATTINKARA TALUK, DISTRICT TRIVANDRUM.

126. VISHNU IMAGE, ARUVIKKARA, MARANALLUR, NEYYATTINKARA TALUK, DISTRICT TRIVANDRUM.

MADHYA PRADESH

127. CHAMAN MAHAL, ISLAMNAGAR, DISTRICT SEHORE.—The spongy plaster on the terrace and on the top and sides of the dome was repaired and a new coat of plaster was put finishing it with cement concrete. The inner portion of the dome was provided with fresh stones and the voids were filled with gravity grouting and the terrace watertightened. The overhanging facade of the *hammam* was underpinned.

After underpinning and re-setting the facade of the *hammam* the glass panels on all the sides were restored suiting the original work.

128. MEDIEVAL TEMPLE-GROUP, ASHAPURI, DISTRICT RAISEN.—The work involved debris clearance and laying bare the remains and sculptures of the temple. The sculptures have presently been arranged in an open-air museum pending the construction of a sculpture-shed. Most of the sculptures belong to the Brahmanical pantheon; one of the sculptures recovered is a huge monolithic image of Vishnu, locally called Hanuman.

129. LAKHNESHWAR MAHADEO TEMPLE, KHAROD, DISTRICT BILASPUR.—The work at the site involved providing barbed-wire fencing to the monument, fixing of iron gate to the *sabha-mandapa,* jungle clearance around the monument, construction of entrance gate, and laying stone flooring in the temple.

130. CHHATRI OF MAHARANI LAKSHMIBAI OF JHANSI, GWALIOR.—The work involved earthwork and laying out of a lawn in front of the *chhatri.* A cultural notice-board was also set up.

131. JAHANGIR'S PALACE, ORCHHA, DISTRICT TIKAMGARH.—The work mainly consisted of debris and jungle-clearance. Besides, the flooring in some of the rooms was re-done and wooden doors were also provided. To counter the menace of bats and birds A. G. *C. jalis* were provided in some of the rooms.

MAHARASHTRA Repairs

were carried out at the following monuments:

132. SAMADHI OF HARI NARAYAN SVAMI, ASHTI, DISTRICT AHMADNAGAR.—A grant-in-aid of Rs. 800 was sanctioned for repairs to the Samadhi.

133. MAHADEVA TEMPLE, ANWA, DISTRICT AURANGABAD.

134. BAG-BANI BEGUM, KHULDABAD, DISTRICT AURANGABAD.—Repairs to the main gate and the tank supplying water to the garden were carried out.

MADRAS

135. ANCIENT CHERA INSCRIPTIONS, ARANATTAR HILLS, VELAYUTHAMPALAYAM, DISTRICT TIRUCHCHIRAPPALLI.—A barbed wire fencing was provided around the Brahmi inscriptions and it is proposed to cover the exposed part of the inscription with transparent synthetic Araldite resin.

MYSORE

136. PALACE OF RANI CHANNAMMA, KITTUR.—The area around the palace was levelled up and the debris within the palace area cleared. The existing portion of the walls are being strengthened.

ORISSA

During the year under review, repairs to the following monuments were attended to:

137. SATRUGHNESVARA TEMPLE, BHUBANESWAR, DISTRICT PURL

138. SHAHI MOSQUE, BARABATI FORT, CUTTACK.

139. GATISVARA TEMPLE, SAKHIGOPAL, DISTRICT PURL

RAJASTHAN Conservation

work was done at the following monuments:

140. AMBER PALACES, AMBER, DISTRICT JAIPUR.

141. TEMPLES AT JAGAT.

142. MARDANA PALACES, UDAIPUR.

143. DEVALA AT MANDORE, DISTRICT JODHPUR.

IX. ARCHAEOLOGICAL CHEMISTRY[1]

TREATMENT OF MONUMENTS AND PAINTINGS

ANDHRA PRADESH

1. THOUSAND-PILLARED TEMPLE, HANAMKONDA, DISTRICT WARANGAL.—Chemical cleaning of pillars and lintel pieces was continued.

BIHAR

2. ASOKAN PILLAR, LAURIYA ARARAJ, DISTRICT CHAMPARAN.—The fresh growth of moss on the pillar was eradicated. The slight salt efflorescence on the lower portions of the pillar was tackled by paper-pulp treatment. Fungicidal and preservative coating was there after given to the pillar.

3. STUCCO FIGURES, APHSAD, DISTRICT GAYA.—The stucco figures in the unprotected mound at Aphsad, which stands in the thick of the inhabited village, were found subject to erosion. A number of these figures, which showed signs of advanced decay in the form of crumbling and flaking of the surface, were cleared of vegetal and other accretions and were preserved.

DELHI

4. BHADON PAVILION, RED FORT, DELHI.—The marble work in the Bhadon pavilion which had been discoloured by smoke and the effect of sulphur dioxide due to its contiguity to the Railway Station was subjected to chemical treatment. The work involved the clean ing of the sooty and greasy layer covering the marble surface by using organic chemicals and synthetic detergents like triethanolamine and lissapol. Vegetal growth was eliminated with the help of ammonia. The effect of brown and yellow stains was reduced by using chloromine T.

5. RANG MAHAL, RED FORT, DELHI.—About forty square metres of the exposed painted surface of the intrados of the arches of the Rang Mahal was found covered with accretions, smoke, dust and discoloured varnish. The chemical work involved (i) the removal of these accretions and deposits, (ii) dissolving of the molten bees' wax after the removal of beehives, and (iii) the removal of the film of moss. As a result of this work, bright colours which were hitherto hidden under the accretions were brought to light.

[1] Information from the Archaeological Chemist in India except as mentioned otherwise.

HIMACHAL PRADESH

6. SIVA TEMPLE, JAGATSUKH, DISTRICT KULU.—The images in the temple, which have been carved out of soft grey micaceous schist, found thickly overlaid with moss and strains of lichen, were chemically treated.

MADHYA PRADESH

7. WESTERN GROUP OF TEMPLES, KHAJURAHO, DISTRICT CHATTARPUR.—The work of chemical treatment in the sculpture-rich Lakshmana temple (pls. LX and LXI) and its four subsidiary shrines involving the removal of vegetal growth, salt efflorescence, lime and ochre wash and consolidation of the flaking stone surfaces was completed. The growth of moss on the roof of the *mandapas* of Devi Jagadamba temple was also eradicated and fungicidal and preservative applications were given. The work of removal of moss and lichen on the Visvanatha temple was commenced.

8. LARGE SAS-BAHU TEMPLE, FORT GWALIOR.—In continuation of last year's work *(1965-66,* p. 126), the lime-wash coating on the sculptures and carvings was softened or dissolved or removed. However, this work could not be completed in the deep crevices and inaccesible corners, where the deposits of lime are thick and tenacious and the removal of these by the use of concentrations of strong chemicals might have harmful effects. The exterior of the temple was cleared of thick vegetal growth, and in the interior salt efflorescence was eliminated by the use of paper-pulp and intensive washing. The salt-affected surface of the stone, which had started crumbling, was consolidated by the application of polyvinyl acetate preservative emulsion or solution. The temple was also found subjected to fungicidal growth which had left black colouring substances on the surface and had also perhaps penetrated into the granular surface of the stone. Complete eradication of these substances was not achieved.

9. STUPA NO. 1, SANCHI, DISTRICT RAISEN.—The moss and lichen growth on the four gateways and the railings around Stupa no. 1 were subjected to chemical treatment.

10. ROCK-CUT CAVES, UDAIGIRI, DISTRICT VIDISHA.—The large-size sculptures of Vishnu and other deities were chemically treated for the removal of vegetal growth, *sindoor,* smoke and oily deposits.

MADRAS

11. KAILASANATHA TEMPLE, KANCHIPURAM, DISTRICT CHINGLEPUT.—The chemical cleaning and preservation was continued.

12. VAIKUNTHA-PERUMAL TEMPLE, KANCHIPURAM, DISTRICT CHINGLEPUT.—The chemical cleaning of sculptures, etc. was completed.

13. ARJUNA'S PENACE PANEL, MAHABALIPURAM, DISTRICT CHINGLEPUT.—The work of removal of soluble salts, etc., was taken up by applying paper-pulp. Chemical cleaning and preservation of the sculptures were also done.

14. VALISVARA TEMPLE, TIRUVALISHWARAM, DISTRICT TIRUNELVELI.—The sculptures in the temple and the inscriptions on the walls of the sanctum, which were covered with moss, lichen and lime-wash, were cleaned.

MAHARASHTRA

15. ROCK-GUT CAVES, AJANTA, DISTRICT AURANGABAD.—Filleting work was continued. The repairs to the stone elephant in Cave no. 16 were completed.

16. BIBI-KA-MAQBARA, AURANGABAD.—Lime wash and pencil scribblings, etc., over the paintings were removed by chemical cleaning. The work is in progress.

17. ROCK-CUT CAVES, ELLORA, DISTRICT AURANGABAD.—Filleting work was continued.

18. ROCK-CUT CAVES, KARLA, DISTRICT POONA.—The sculptures in the caves were cleaned.

MYSORE

19. GOMATESVARA STATUE, SRAVANABELGOLA, DISTRICT HASSAN.—A coating of wax in patroleum solvent was given to the statue in order to prevent the oil, milk, etc., entering into the cracks and weathered depressions on the statue. The accumulation of these substances results in accretions on the statue.

ORISSA

20. BAITAL-DEUL, BHUBANESWAR, DISTRICT PURI.—Eradication of vegetal matter, soot and lime wash on the *jagamohana* in continuation of last year's work *{1965-66,* p. 126) was completed. Work was taken up in the exterior of the sanctum, where the red-coloured coating had to be uncovered after removal of the cryptogamic growth. Such protective coatings were perhaps given by the original builders of the temples to check the decay of the stone. This is also evident in the other temples at Bhubaneswar,where by and large, the coating has not survived. In order to preserve the surviving coating on the Baital-Deul, only very dilute ammonia and mild chemicals were used for the eradication of the superficial extraneous accretion.

21. BRAHMESVARA TEMPLE, BHUBANESWAR, DISTRICT PURI.—In continuation of last year's work *(1965-66,* p. 128), the chemical treatment of the main temple, involving the removal of thick crusts of moss and lichen, was completed. The images all round the temple (pls. LXII and LXIII) now present a better appearance.

22. NAT-MANDIR AND BHOGA-MANDAPA, LINGARAJA TEMPLE, BHUBANESWAR, DISTRICT PURI.—This temple had been subjected some years ago to elaborate chemical treatment and had thus remained free from vegetal growth. However, fresh growth of moss and lichen made its appearance on the exterior of the high *vimana* and other parts of the temple. To begin with, work was taken up in the lower part.

23. SUN TEMPLE, KONARAK, DISTRICT PURI.—In continuation of the previous year's work *(1965-66,* p. 128) involving intensive chemical treatment of a part of the temple above the third set of the *pidhas,* soluble salts and vegetal growth have been eliminated from three sides, and the cleaned sculptures have been given fungicidal treatment with zinc silicofluoride. The work of spraying ochre suspension, of a tint, simulating the colour of the stone, and the application of resin preservative would be carried out after the fourth side is freed of the accretions. The application of ochres is intended to minimize the eroding effect of the sand-bearing winds on the surface of the stone which is already heavily denuded and worn down due to the physical and chemical effects of weathering agencies like salt-spray and sand-blasting from the seashore nearby.

24. ROCK-SHELTER, RAVAN CHHAYA, SITABHUNJI, DISTRICT KEONJHAR.—The faint red coloured paintings on the ceiling of the overhanging rock were chemically treated for the removal of overlying accretions like dust, insect-nests, cobwebs, film of moss, water-stains and colouring matter and fungal growth. Most of the paintings, covering over half of the rock-surface, have almost been lost in the past on account of the flow of rain-water. Wherever the outlines of the paintings were seen, these have been fixed. In the remaining half portion, the faint painted surface after being cleaned has been consolidated with poly-vinyl acetate.

PUNJAB

25. TOMB OF PUPIL MUSICIAN, NAKODAR, DISTRICT JULLUNDUR.—In continuation of the last year's work *(1065-66,* p. 128) chemical treatment of the painted and inlay decoration of the exterior of the tomb was taken up. The main problem here is the removal of dried moss from the paint or inlay-work. The accretion over the inlay-work was eliminated with the help of dilute ammonia. The paint surface being exposed to direct sun and rain is marked with minute cracks and as such tends to flake. Since the roots of moss and lichen have penetrated, the chemical treatment of the paint layer has to be carried out cautiously so that the paint and pigment are not affected or loosened by the solvents. The main chemical used for cleaning the paint surface is refined turpentine.

RAJASTHAN

26. PALACE, AMBER, DISTRICT JAIPUR.—The wall-paintings in the Bhojana-Sala were taken up for cleaning and preservation. The work was done in two parts. The first part consisted of cleaning of the floral designs on the lower portions of the wall, while the second consisted of experiments on the Siyah Kalam paintings. These experiments were conducted on unfinished paintings, and it was found that the colours of these paintings had been retouched at a number of places. Nearly 35-303 sq. m painted area was cleaned and preserved. Trial experiments were also conducted over the wall paintings on the Ganeshpole gate of the Amber Palace.

UTTAR PRADESH

27. TOMB OF AMIR KHUSRO, KHUSRO BAGH, ALLAHABAD.—These paintings had been very badly affected over the years, resulting in the loosening of the bond between the painted plaster and the support wall. The plaster was found bulging at a number of

places and the edges were broken and loose. The main cause of this deterioration seems to be due to the decay of the binding medium used in the paintings. The loosening plaster was fixed back with the help of concentrated resin solutions while the broken edges were repaired with suitably tinted modelling compositions. Minor fresh accretions like dust, cobwebs and insect-nests were also eliminated. The paintings are now in a much better state of preservation.

28. ZANANA PALACE, FORT, ALLAHABAD.—Chemical treatment of the paintings in verandahs and galleries of this monument was continued *(1965-66,* p. 128) but in view of the security restrictions in the area, the work had to be temporarily suspended.

29. RANI MAHAL, JHANSI.—Chemical treatment of the paintings in the retiring room, the main auditorium walls and ceiling of Rani Lakshmi Bai's Palace (pl. LXIV) was taken up. The paintings on the walls and pannelled ceiling were found to be covered with soot, dust and varnish. Besides, the paint layer also showed cracks at many places and had become loose. Experimental work on the paintings revealed that the bright colours had been obscured by surface-accretion. The painted plaster in the stairways and in the main audience hall which had detriorated on account of exposure to rain and weather also required chemical treatment. The thin paint layer, executed on lime plaster, was also found to have been affected and was peeling off. Methyl alcohol and some ester have been found very useful.

30. DHAMEKH STUPA, SARNATH, DISTRICT VARANASI.—In continuation of the last year's work *(1965-66,* p. 129), chemical treatment of the carvings on this ancient *stupa* was completed. The work entailed eradication of vegetal growth, elimination of soluble salts and consolidation of the flaking stone surface.

WEST BENGAL

31. JOR BANGLA TEMPLE, BISHNUPUR, DISTRICT BANKURA.—This temple, which has on its exterior terracotta carvings, designs and figures, was taken up for chemical preserva tion. Soot, coloured lime-wash, moss and lichen, efflorescences caused by soluble salts and ochre washes were the main factors which had contributed to the deterioration of the structure. At places, the decorated terracotta plaques have also become porous and crumbly. It is proposed to consolidate the friable carvings and figures after the overlying accretion has been eliminated. Teepol and lissapol detergents have been found effective for washing of smoke and tarry material.

TREATMENT OF EXCAVATED OBJECTS AND MUSEUM EXHIBITS

During the year under report, thirteen thousand seven hundred and ninety-four antiquities, variously of copper, iron, silver and gold were chemically treated and preserved, in the laboratory of the Archaeological Chemist of the Survey. Of these, eleven thousand five hundred represented copper coins from the important hoard found at Delhi a few years ago. Forty-six paintings on paper from the Archaeological Museum, Bijapur, were subjected to elaborate cleaning and preservation.

Among the objects cleaned in the laboratory of the Department of Archaeology, Rajasthan, were two wooden painted window panels, fifty-two pieces of stone sculpture,

two bronze images from the Bikaner Museum, one hundred and two copper and two hundred and fifty-two silver coins, and six miniature paintings. The entire textile section of the Jaipur Museum was given fumigation.

A large number of antiquities, mainly of stone, terracotta and metal besides a number of fossils of vertebrates from Susunia and the Gandhesvari vallery in District Bankura were treated in the laboratory of the Department of Archaeology, West Bengal. Apart from these, fifteen silver pucnh-marked coins, were also chemically treated.

ANALYSES AND RESEARCH[1]

GEOCHRONOLOGICAL STUDIES.—Geochronological investigations were carried out on the specimens from Hemmige, Kathmandu, Kuchai, Baidyapur, sites in the Kangra valley and in West Bengal.

As an extention of investigation of laterites, several specimens of laterities or laterite-like materials from different sites such as Goa, Belgaum, Dharwar and Hoskote were subjected to detailed examination. Several specimens of bone were also taken up for fluorine estimation. Mechanical analysis of fifteen specimens of soil from Hoshangabad was carried out during the period under report. Specimens of soil and pottery from Ahichchhatra, Bargaon, Nasirpur, Hastinapur, etc., were subjected to mechanical analysis, microscopic examination and chemical analysis with a view to determining the nature of the sediments and the mode of their formation and deposition.

The Geochronological Section also collaborated with the Prehistory Branch of the Survey in geochronological investigations of some prehistoric sites in south India.

CHEMICAL ANALYSIS.—Forty-eight specimens comprising metals and alloys, plasters, bricks etc., were subjected to detailed examination and chemical analysis. In addition, five hundred and sixty-nine coins, made variously of gold, copper and silver were subjected to physical tests for determination of their weights, specific gravity and dimensions. Chemical analysis of thirteen specimens of pottery, slag, metal, etc., was also carried out.

The results of chemical analysis and laboratory tests led to very interesting conclusions and were helpful in reconstructing the techniques used by ancient craftsmen.

[1] Information from the Archaeological Chemist in India.

X. ARCHAEOLOGICAL GARDENS[1]

ANDHRA PRADESH

1. HILL-TOP, NAGARJUNAKONDA, DISTRICT GUNTUR.—With the submergence of the Nagarjunakonda valley under water, and the hill-top becoming an island, several problems relating to maintenance of gardens and landscaping cropped up. Extensive clearance work had to be done around the Museum expecially on its eastern side up to the Jetty.

A nice garden around the departmental Rest House was also laid out under difficult circumstances. The bottom of the rustic pond opposite Tourist Home in the first enclosure was sealed with concrete to make it watertight. A dwarf barricade wall along with grill gates was also built opposite the Tourist Home to prevent trespassing into the area. Due to the scarcity of water, especially during summers, difficulties were faced for the maintenance of the garden.

BIHAR

2. MAURYAN PALACE, KUMRAHAR, PATNA.—The garden around the palace was maintained in a nice condition despite severe drought conditions in the District. Throughout winter, the dahlias, roses and chrysanthemums of different varieties remained in bloom.

3. EXCAVATED REMAINS AND ARCHAEOLOGICAL MUSEUM, NALANDA, DISTRICT PATNA.—The gardens around the *stupa* and the Museum were maintained in very presentable condition despite severe drought conditions. One of the fallow plots in the midst of the garden was re-turfed.

DELHI

4. ARCHAEOLOGICAL AREA, QUTB, DELHI.—The lawns and shrubs were kept green even during summer and bougainvilleas and palms were planted at appropriate places. Jungle growth in trees was cleared and the garden maintained properly.

5. RED FORT, DELHI.—The entire longitudinal bed in the Battery Area was covered with budded roses. Dot plants of various varieties of bougainvilleas, lantanas and creepers were planted in the Hayat Buksh garden. An electric motor pumping-set was installed in the old well through the M. E. S. and the old fountain line was partly commissioned. The area in front of the Rang-Mahal was planted with shrubs and other flowering plants and the entire garden was kept in good condition throughout the year.

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[1] Information from: 29, Director of Archaeology and Museums, Rajasthan State and the rest from the the Garden Superintendent of the Survey.

6. ARAB-KI-SARAI, NEW DELHI.—The dug-up area was levelled, dressed up and cleaned. Casualties of bougainvilleas and grevilleas were replaced. Roads and paths were cleaned and the lawns mowed. The garden was kept neat and clean throughout the year.

7. HAUZ KHAS NEW DELHI.—The garden was kept in a presentable condition throughout the year and perennial roses were planted in the hedges.

8. HUMAYUN'S TOMB NURSERY, NEW DELHI.—New varieties of roses were introduced from gardens outside Delhi. Old *sarkanda chicks* were replaced and the glass and the *chick-houses* were maintained properly. The Nursery catered to the requirements of plants, both perennials and annuals, to all the gardens in Delhi.

9. HUMAYUN'S TOMB, NEW DELHI.—Dot plants of new varieties of bougainvilleas, lantanas, thuja, etc., were planted. Unshaped trees were lopped and casualities in the shrubbery border replaced.

10. JANTAR-MANTAR, NEW DELHI.—Some *motia* beds were introduced at the back and budded roses in the front. All seasonal operations were attended to properly and the gardens maintained in a neat and tidy condition.

11. KHAN-I-KHANA'S TOMB, NEW DELHI.—Hedges along the boundary were clipped, shrubs planted and the garden presented a soothing look.

12. PURANA QILA, NEW DELHI.—Jungle clearance of the area was done, and dead and unwanted plants and trees were disposed of. The small garden inside the Qala-i-Kuhna Mosque was kept in good condition.

GOA

13. ARCHAEOLOGICAL AREA, VELHA GOA.—The gardens were maintained in a presentable condition, despite the paucity of water.

MADHYA PRADESH

14. KHAJURAHO, DISTRICT CHATTARPUR.—Despite failure of rains and scarcity of water, the gardens around the temples were maintained in a satisfactory condition. The bougainvilleas and dot-flowering trees, planted earlier, were in full bloom throughout the winter and the lawns were well-maintained. The stone-edging of the roads and paths was also completed during the year.

MAHARASHTRA

15. FORT, SHANWARWADA, POONA.—The phased programme of replacing the old grass with Calcutta *doob* continued and accordingly a few more plots were re-turfed. The plots which were re-turfed during the preceding years have since been established very satisfactorily. The shrubberies have been properly attended to and casualities replaced. Several new beds have been incorporated and many new varieties introduced.

MYSORE

16. ALI II RAUZA, BIJAPUR.—The ornamental garden was maintained in a fairly presentable condition.

17. ARQUILLA, BIJAPUR.—The newly laid-out garden in this area has started coming up despite the shortage of water.

18. GAGAN MAHAL, BIJAPUR.—The garden was kept in a presentable condition. New changes brought about during the last year have considerably improved the look of the garden.

19. GOL GUMBAD, BIJAPUR.—Hybrid maize and local *jowar* were grown under the 'Grow More Food' campaign.

20. IBRAHIM RAUZA, BIJAPUR.—One crop of hybrid maize was raised under the 'Grow More Food' campaign. Subsequently, the area was again converted into lawns.

21. JOD GUMBAD, BIJAPUR.—The garden was maintained in a presentable condition. The orchard planted during the previous year has shown sufficient progress.

22. JAMI'-MASJID, BIJAPUR.—The garden around the mosque was maintained in a presentable condition by attending to routine garden operation. Pot culture has been completely eliminated, and the garden has been made into a permanent one by increasing judicious ground planting.

23. SIKANDAR SHAH'S TOMB, BIJAPUR.—The garden around this monument was maintained in a presentable condition.

24. DARYA DAULAT BAGH, SRIRANGAPATNA, DISTRICT MANDYA.—The garden which was recently taken over from the Mysore State Department of Horticulture, was maintained in a presentable condition. Besides, the nursery was improved, and several thousands of plants were propagated. One of the buried aqueducts was excavated.

25. GUMBAD, SRIRANGAPATNA, DISTRICT MANDYA.—This garden, recently taken over from the Mysore State Department of Horticulture, was maintained in a presentable condition.

26. KESAVA TEMPLE, SOMANATHAPUR, DISTRICT MYSORE.—With the availability of water from the newly-bored well, steps were afoot for laying out the garden. As a preliminary, the clayey soil was replaced before laying out the garden.

RAJASTHAN

27. ANASAGAR BARADAVI, AJMER.—The laying-out of pipe-line in the garden was completed. With this increase in the irrigation facilities, the garden was kept in a presentable condition in all respects. Trial boring done during the summer months in the Anasagar, which had completely dried up, offered promising results.

28. DIG PALACES, DIG, DISTRICT BHARATPUR.—New annual beds and rose beds were introduced. Throughout the year, the roses, cannas, bougainvilleas and other annuals were in full bloom.

The fountains were run on festive occasions.

29. MISCELLANEOUS GARDENS.—The garden known as Chaman Bagichi in front of the the State Museum, Bharatpur, the Dilaram gardens and the gardens inside the Amber palaces, the gardens inside the observatory at Jaipur, and the garden in Akbar's fort, were maintained.

UTTAR PRADESH

30. FORT, AGRA.—As part of the 'Grow More Food' campaign, the hitherto unutilized area outside the Fort was brought under cultivation of food-grains.

31. KHAN-I-ALAM NURSERY, AGRA.—Attention was paid to propagation of several new varieties of plants and the development of Nursery with the object of converting it into a self-sufficient unit in due course of time, so that it could meet the demand of both the archaeological gardens and the public, as far as possible The Nursery cateres to the requirements of plants, etc., of all the archaeological gardens in the country.

32. GROUP OF MONUMENTS, FATEHPUR SIKRI, DISTRICT AGRA.—Acute shortage of water was faced due to the failure of rains and scanty recuperation of water from the existing well. However, efforts were made to maintain greenery, as far as possible, by bringing water in water-carts from all available sources for irrigating the plantations. The mounds on either side of the road leading to the Diwan-i-Am from Agra Gate have been attended to by landscaping.

33. AKBAR'S TOMB, SIKANDARA, DISTRICT AGRA.—The garden was kept in a presen table condition throughout the year.

34. RESIDENCY BUILDINGS, LUCKNOW.—The lawns around the model room, which had outlived their normal span of life, and had become very patchy and heavily infested with unwanted vegetation, were renovated by planting with Calcutta *doob*. The Rosarium was also completely renovated and new varieties of roses were introduced. Besides, the entire surrounding of the model room was face-lifted.

Assorted varieties of cannas, planted in long patches to impart mass effect, proved very effective in giving colour to the expansive garden. The attempts made to rejuvenate the old bougainvilleas proved very successful and these were in bloom throughout the winter.

A beginning towards the development of a small nursery was also made and nearly 1500 assorted varieties of roses were raised.

35. EXCAVATED REMAINS, KUSHINAGAR, DISTRICT DEORIA.—The garden suffered adversely due to severe drought conditions in the region and irregular supply of water from the State tube-well.

36. EXCAVATED REMAINS AND ARCHAEOLOGICAL MUSEUM, SARNATH, DISTRICT VARANASI.—The garden around the Museum and the site were kept in a satisfactory condition. The mass planting of dahlias and cannas of selected varieties, done in long beds, imparted beauty to the surroundings.

XL PUBLICATIONS

PUBLICATIONS OF THE SURVEY

1. ANNUAL REPORT ON INDIAN EPIGRAPHY.—Report for the year 1962-63 was passed for final printing.

2. INDIAN ARCHAEOLOGY—A REVIEW.—The number for 1962-63 was published.

3. EPIGRAPHIA INDICA.—Part VIII of vol. XXXV and part VII of vol. XXXVI were published. Part I of vol. XXXVII was passed for final printing.

4. EPIGRAPHIA INDICA—ARABIC AND PERSIAN SUPPLEMENT.—The number for 1966 was published and the number for 1967 is in advanced stage of printing.

5. GUIDE BOOKS.—Guides to *Nagarjunakonda* and *Sanchi Museums* were printed.

6. PICTURE POSTCARDS.—The sets on Ellora, Hampi, Elephanta, Belur, Khajuraho, Bijapur, Halebid, Ajanta, Goa and Chitorgarh were reprinted.

OTHER PUBLICATIONS

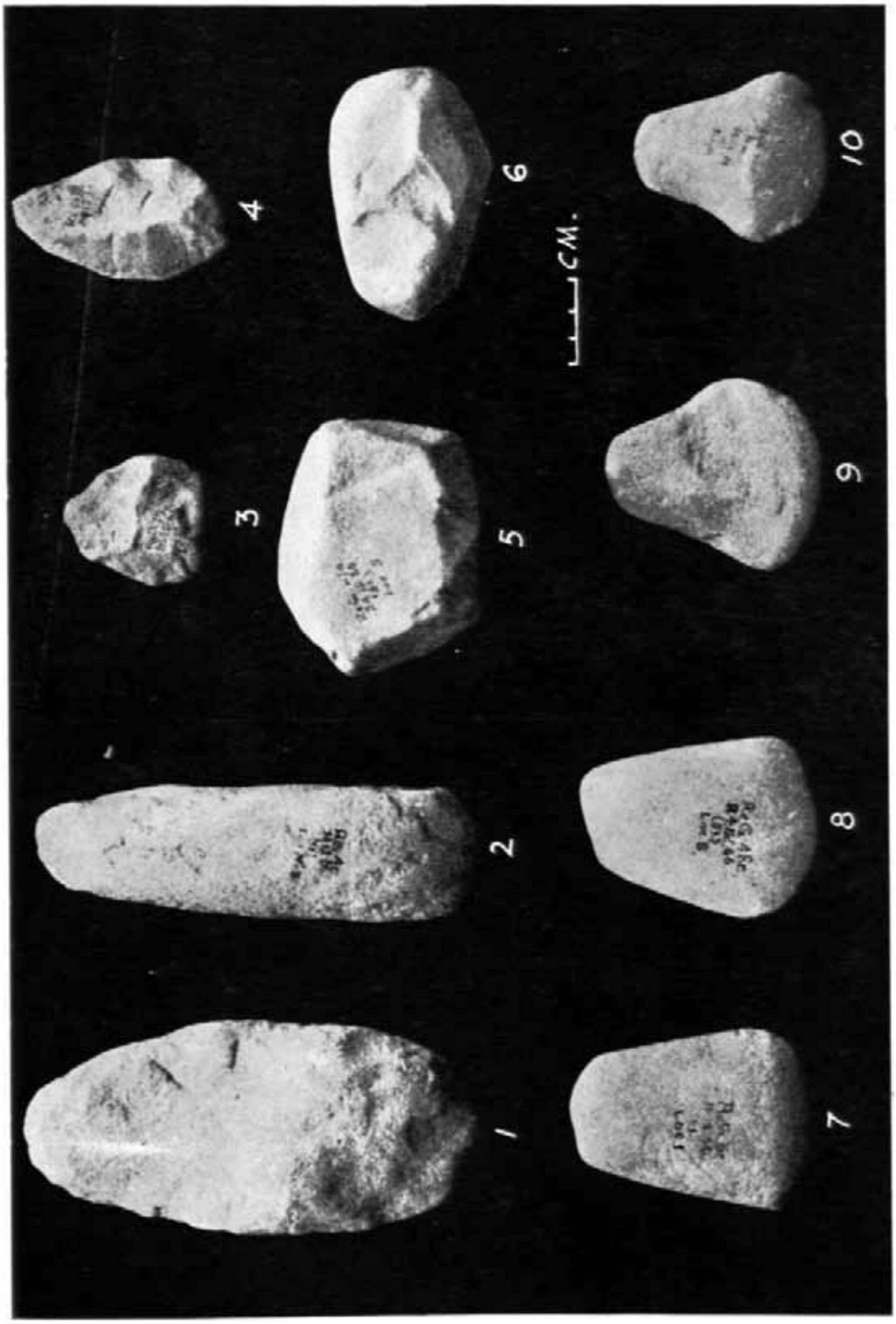
KERALA.—The Director of Archaeology has put on sale the publication *Early Coins from Kerala.* The guides to murals and Padmanabhapuram Palace were sent to the press for printing.

MAHARASHTRA.—The Director of Archives and Archaeology sent to the press, *A Report on the Excavations at Kaundinyapur.* The report on the excavations at Ter was also made ready for printing.

ORISSA.—The Director, Cultural Affairs, Orissa, published *Napoi,* an Oriya *kavya* and *Inscriptions of Orissa,* vol. IV.

UTTAR PRADESH.—The Curator, Mathura Museum, made press-ready the *Iconography of the Balarama Images* and revised the catalogues of Sunga sculptures and Vishnu Images in the Mathura Museum.

WEST BENGAL.—The Directorate of Archaeology, West Bengal published an album, *Terracottas of Antpur* with an introduction by S. C. Mukherji.



Garo Hills, Assam : 1, chipped axe ; 2, chisel ; 3-4, flake tools ; 5-6, cores ; 7-8, thin axes ; and 9 and 10, shouldered celts. *See p. 5*



B

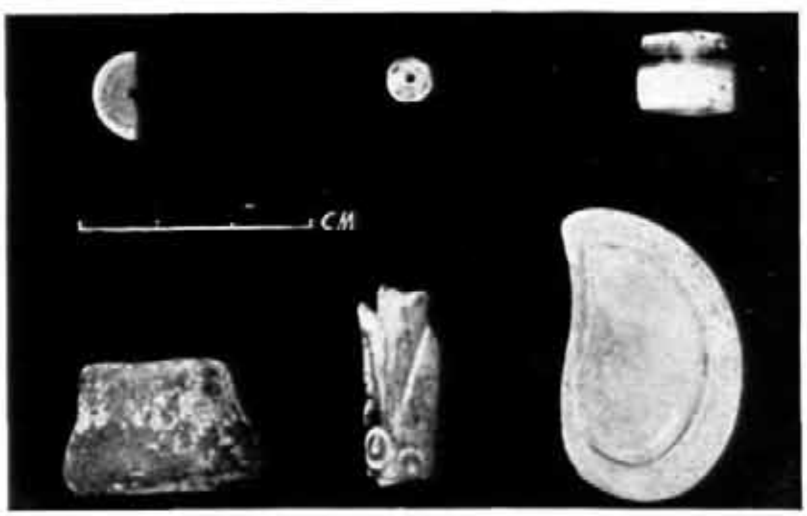


A

Garo Hills, Assam : A, stone axes, Sumatralith type; B, grinding stone. *See p. 5*

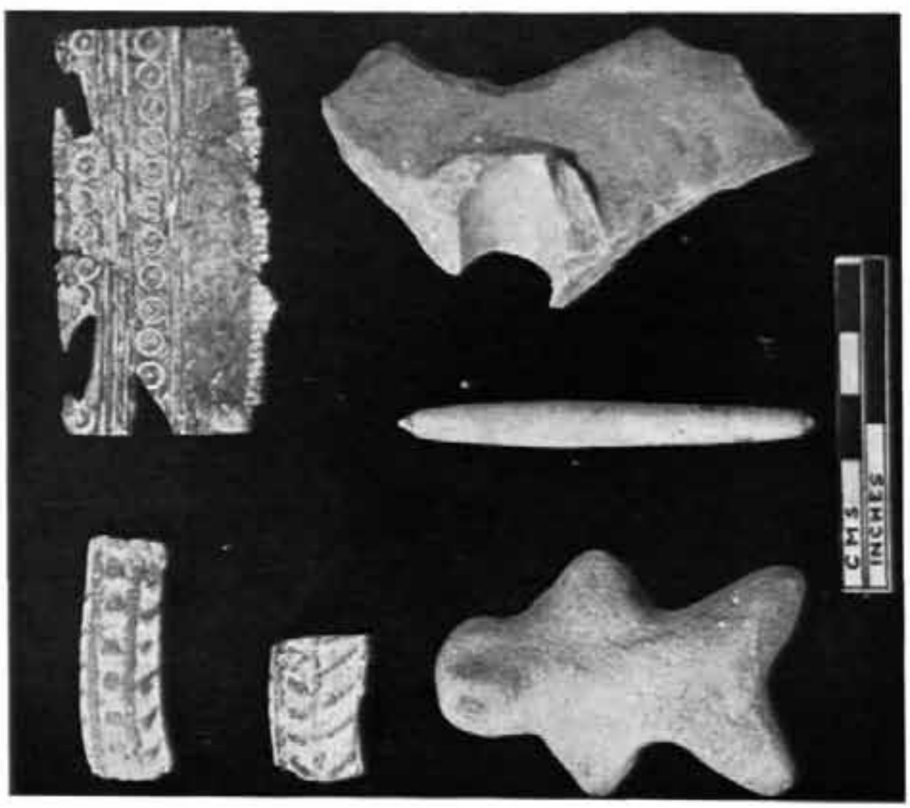


A

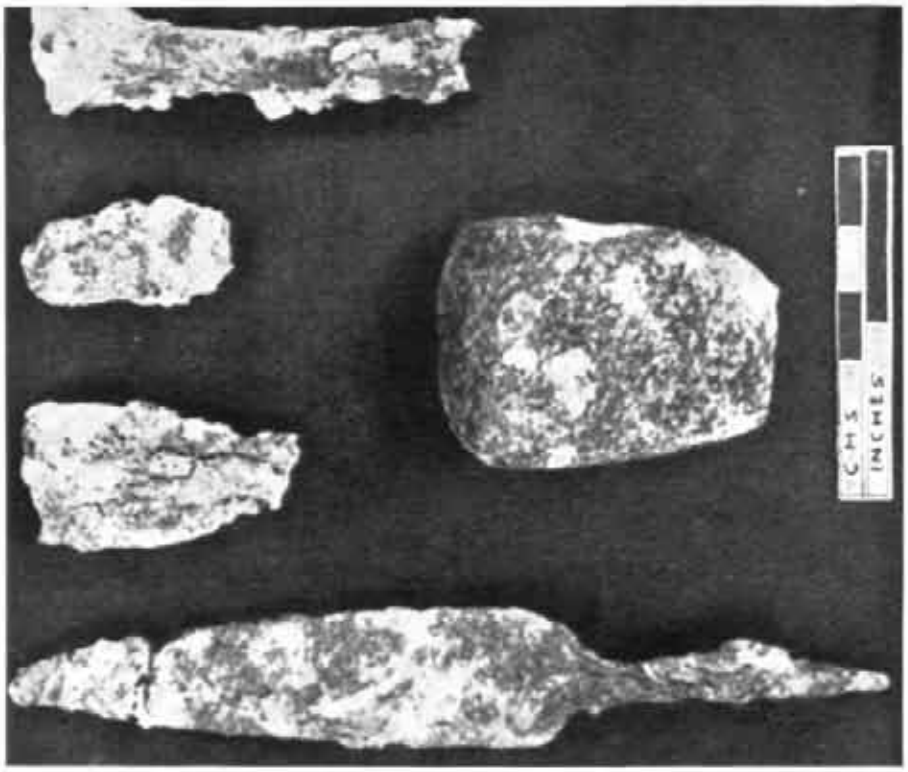


B

Oriup : A, *fragments of painted black-and-red pottery, terracotta figurines and copper bangle* B, *beads and other finds, both Period I.* *See p.* 6

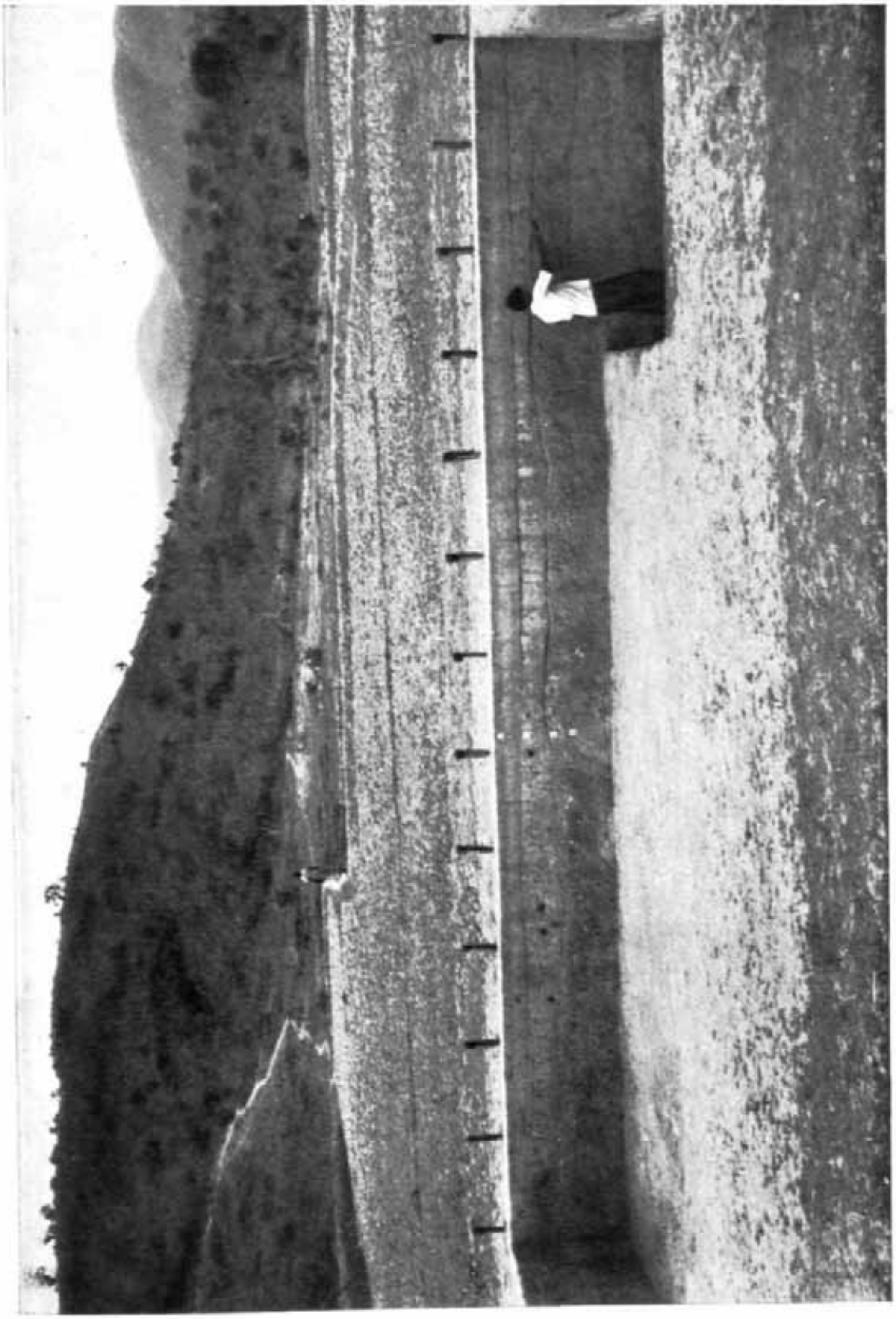


A



B

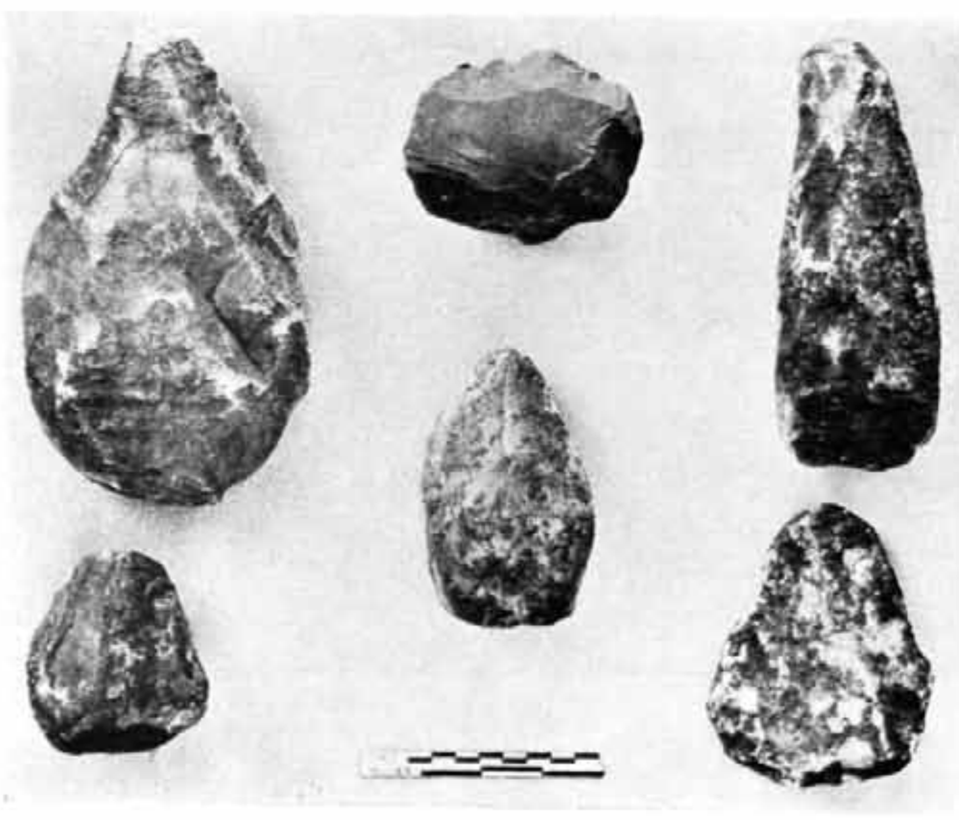
Oriup: A, *miscellaneous finds;* B, *iron objects, both Period II.* *See p. 6*



Lotapahar: general view of excavated trench. *See p. 7*

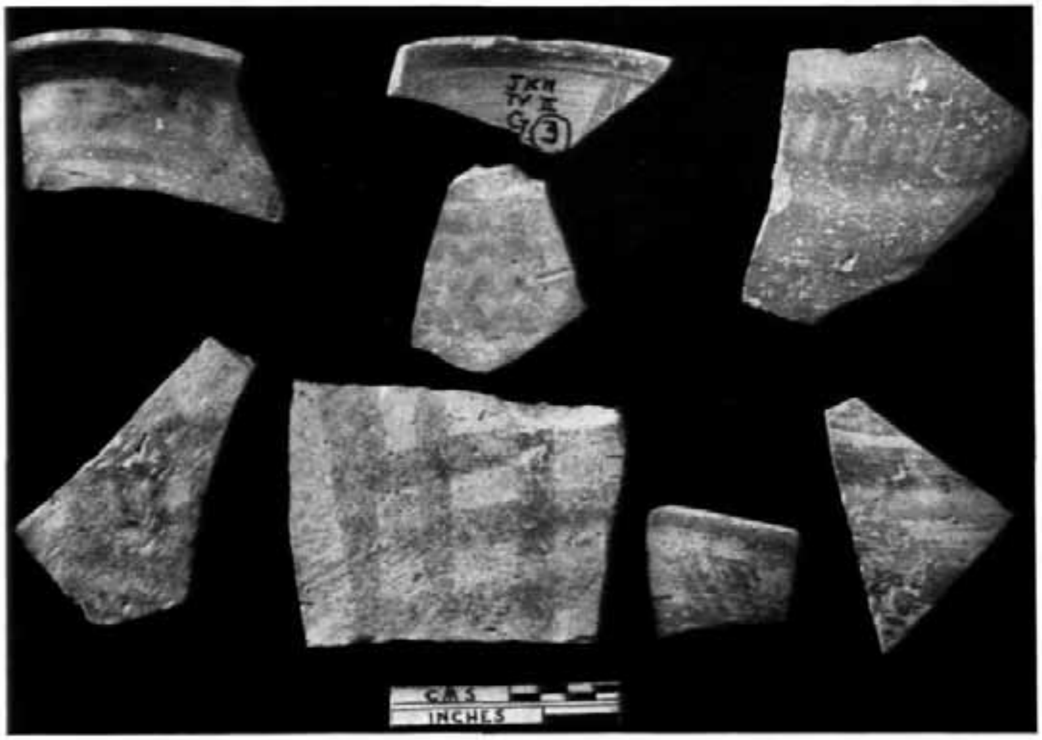


A

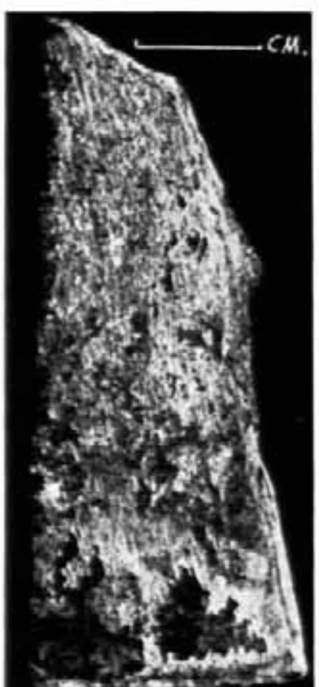


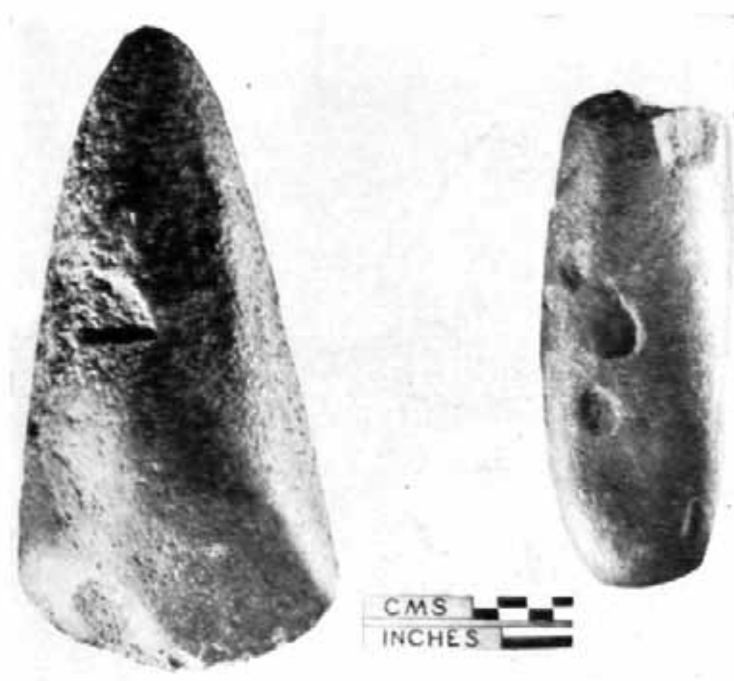
B

Lotapahar; A, microliths; B, palaeoliths. See p. 7



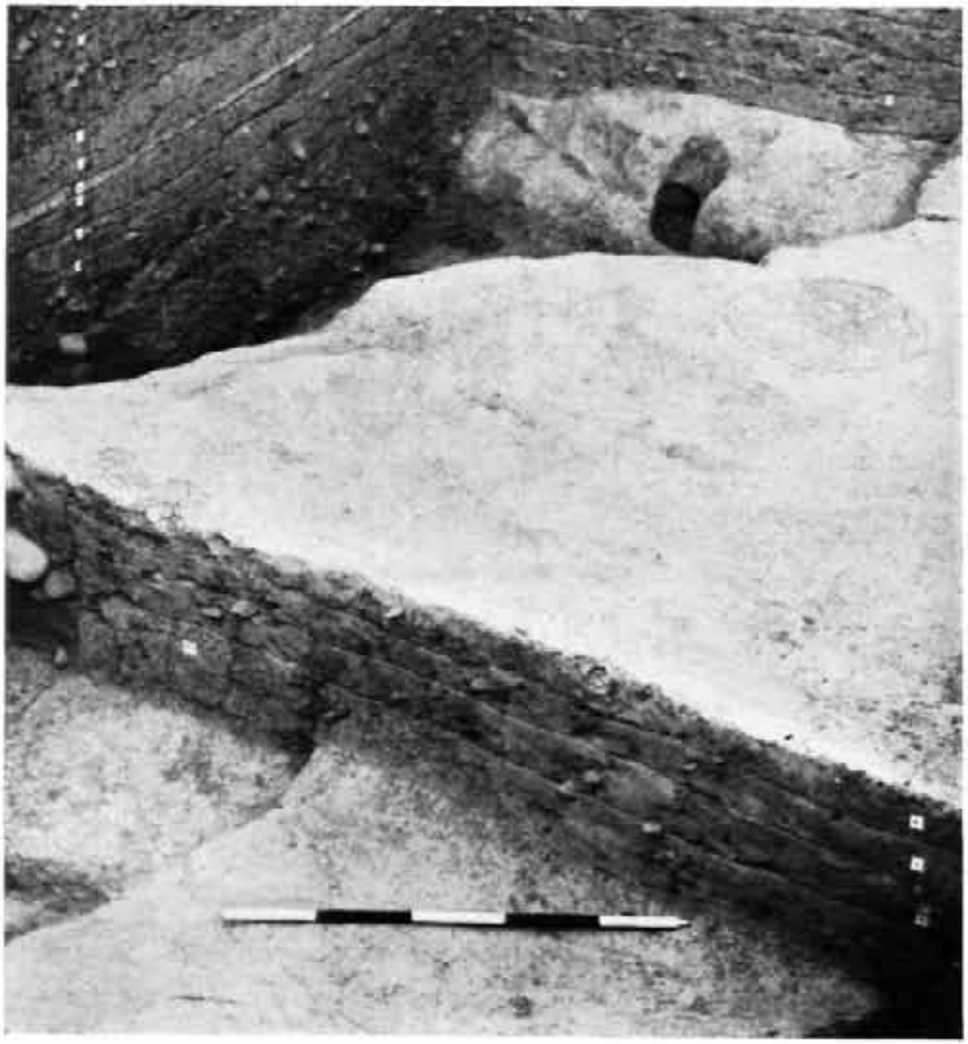
A



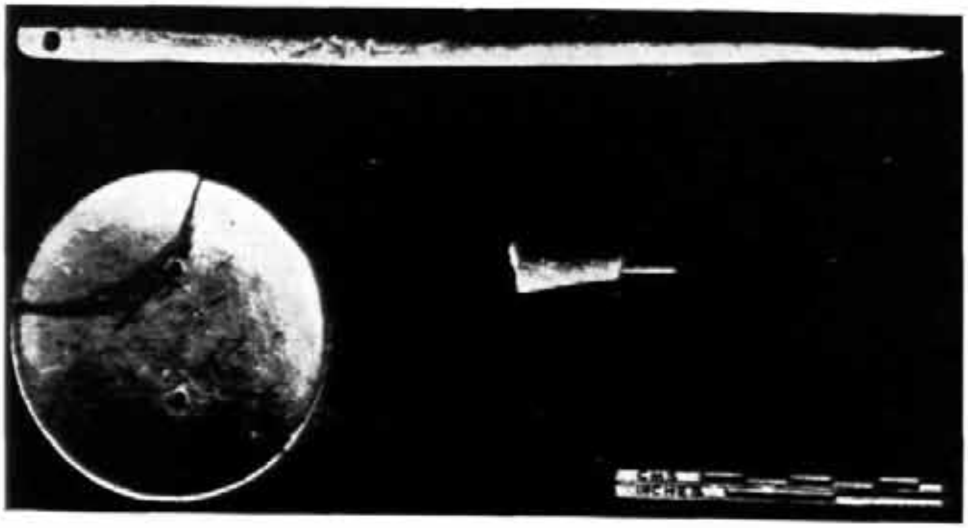


B C

Jokha: A, *chalcolithic pottery;* B, *copper celt; and* C, *stone axes.* *See p. 10*

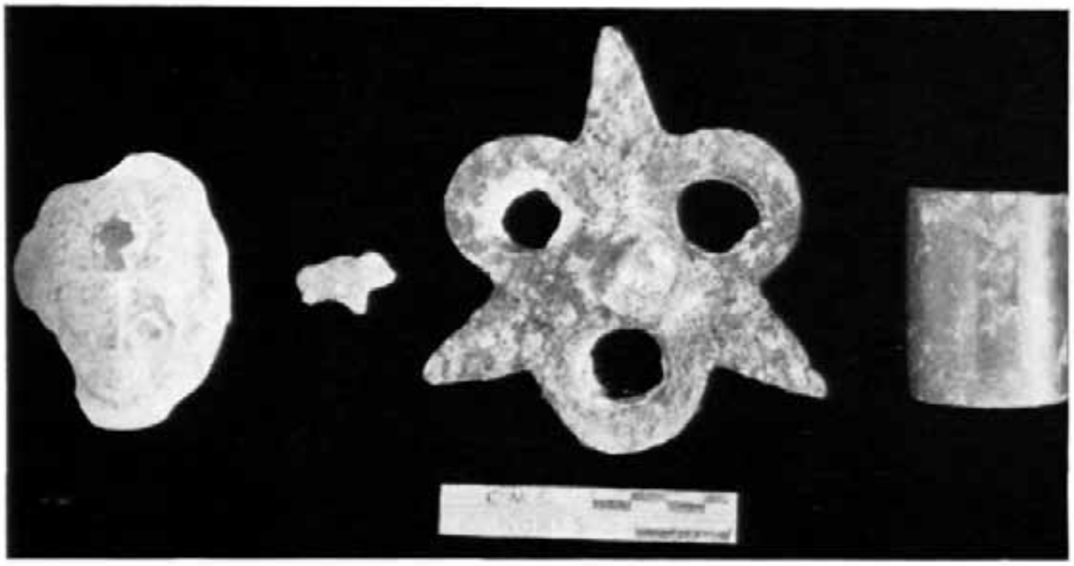


A



B

Burzahom: A, *dewelling pit;* B, *bone tools and crucibles.* *See p. 17*

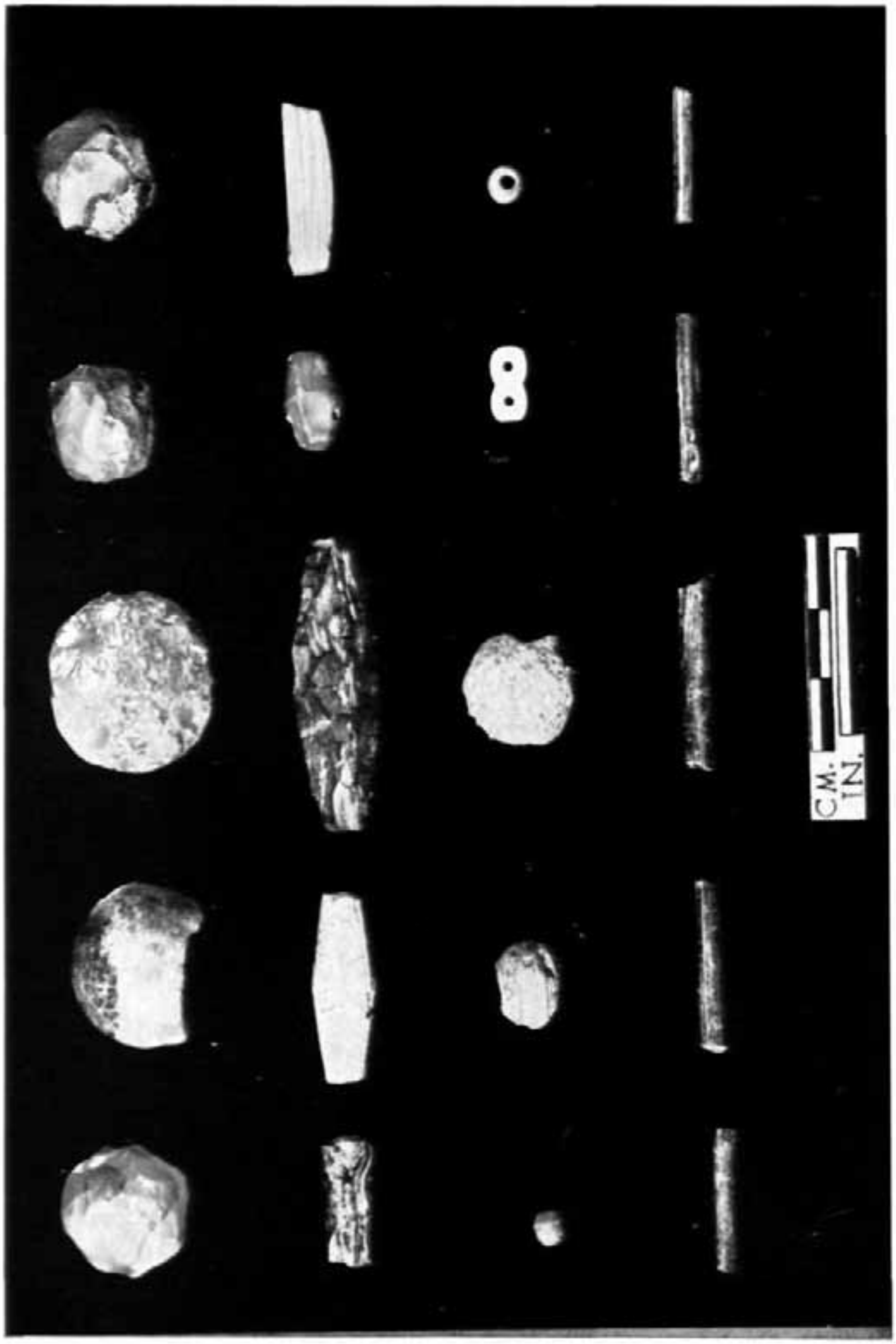


A



B

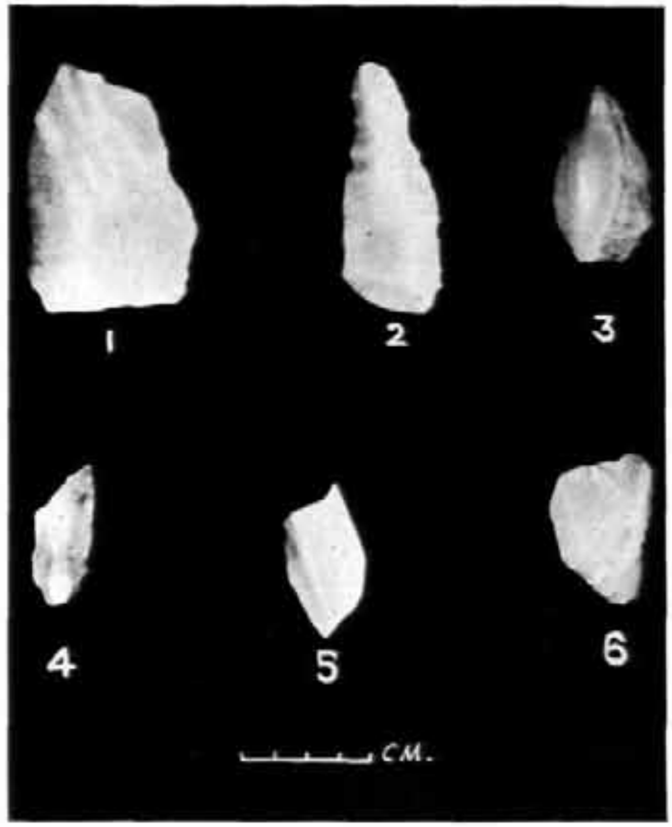
Tripuri : A, *miscellaneous finds from Periods I and III*; B, *burnt brick floor with post-holes, Period III.* *See p. 18*



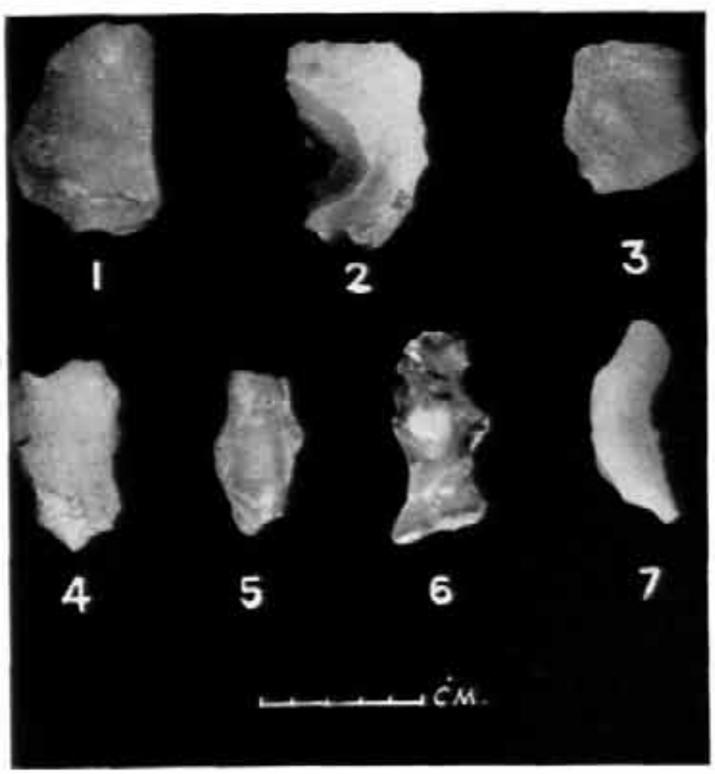
Karaikadu : beads. *See p. 21*



A



B



C

District Dhulia : A, *crested-guided ridge*, B, *Late Stone Age tools*; C, *Late Stone Age tools*. *See p. 23*



A

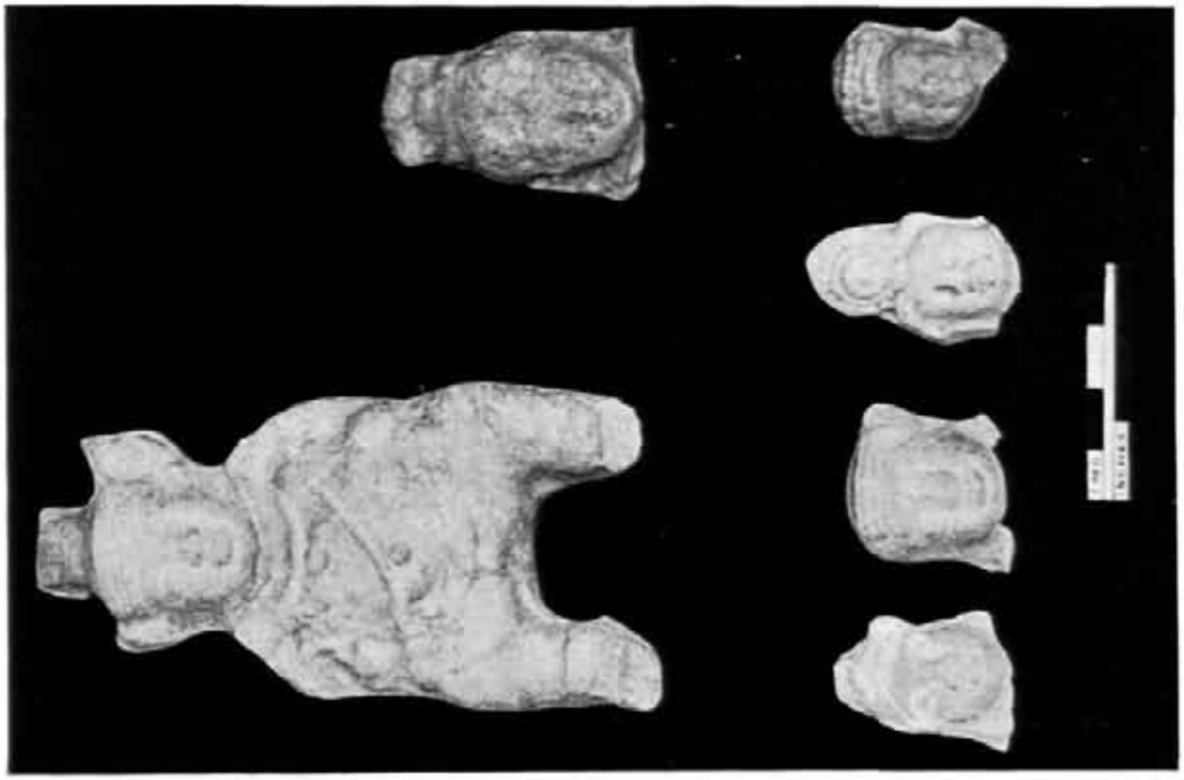


B

Ter : brick-lined soakage pits; B, terracotta lamp. *See p. 26*

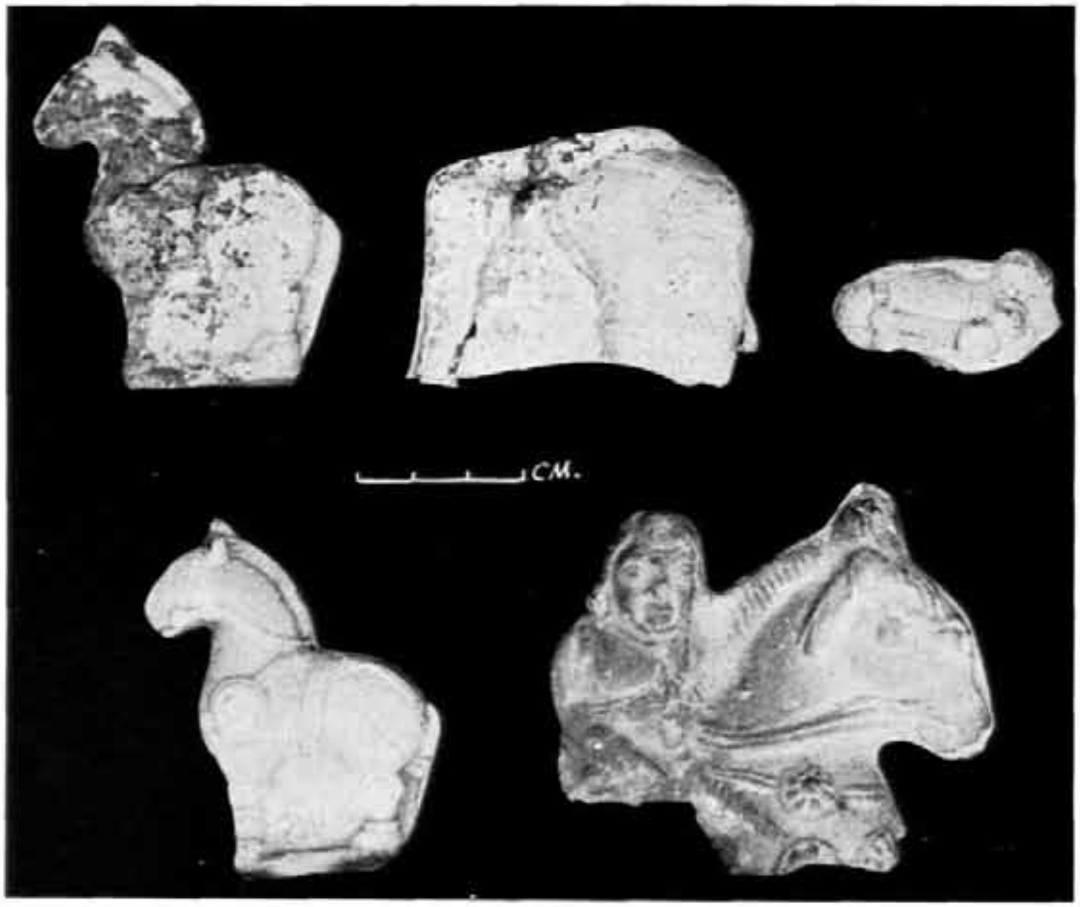


A

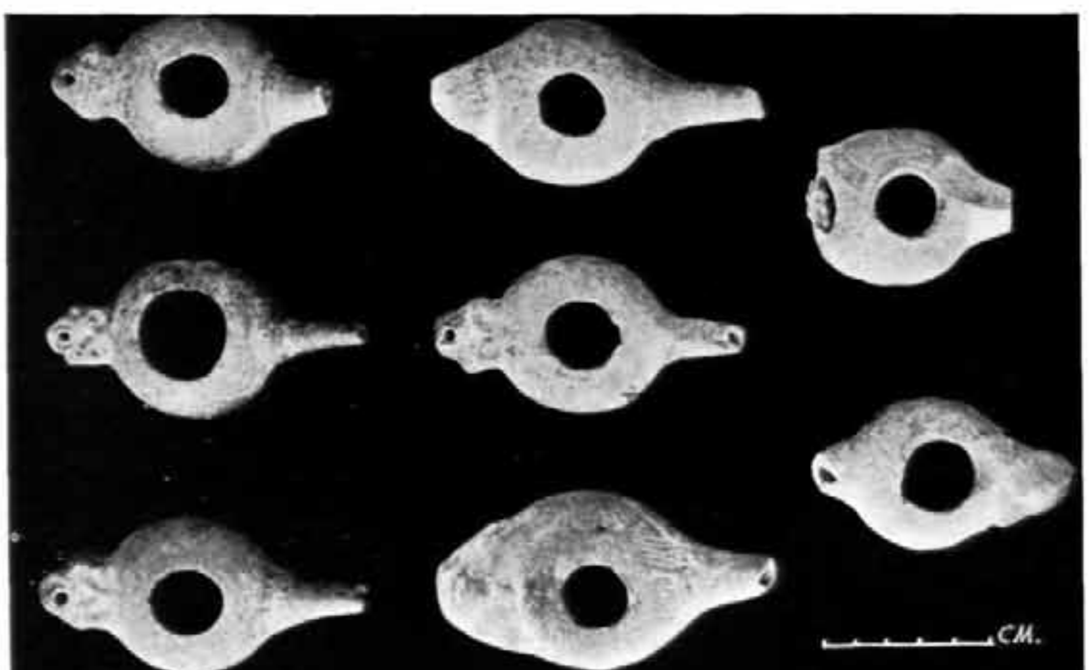


B

Ter: A, soakage pit of terracotta rings; B, terracotta figurines. See p. 26



A

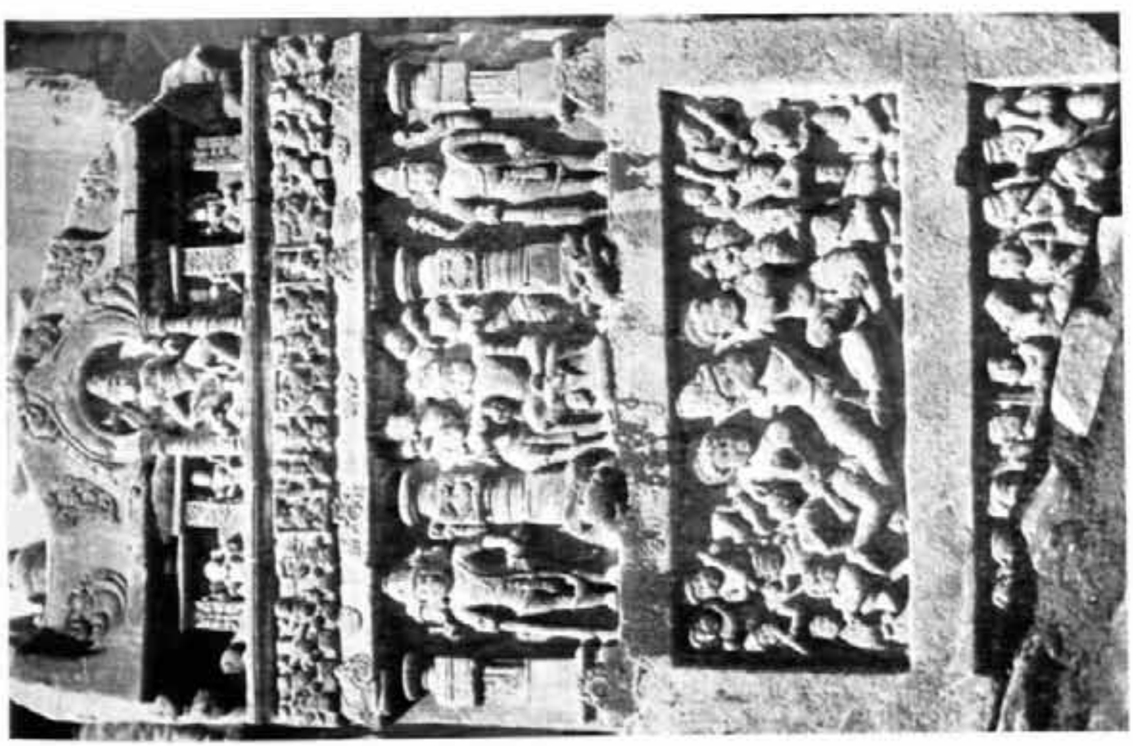


B

Ter : A, *terracotta figurines;* B, *terracotta lamps.* *See p. 26*



B



A

Ron : A, *inscribed viragal* ; B, *Sannathi* : *stele showing the nativity scene of Buddha. See pp.* 28 *and* 29



A



B

Sannathi : A, prince Siddhartha in garden; B, beads, shell bangles and pottery, Satavahana period. *See p. 29*

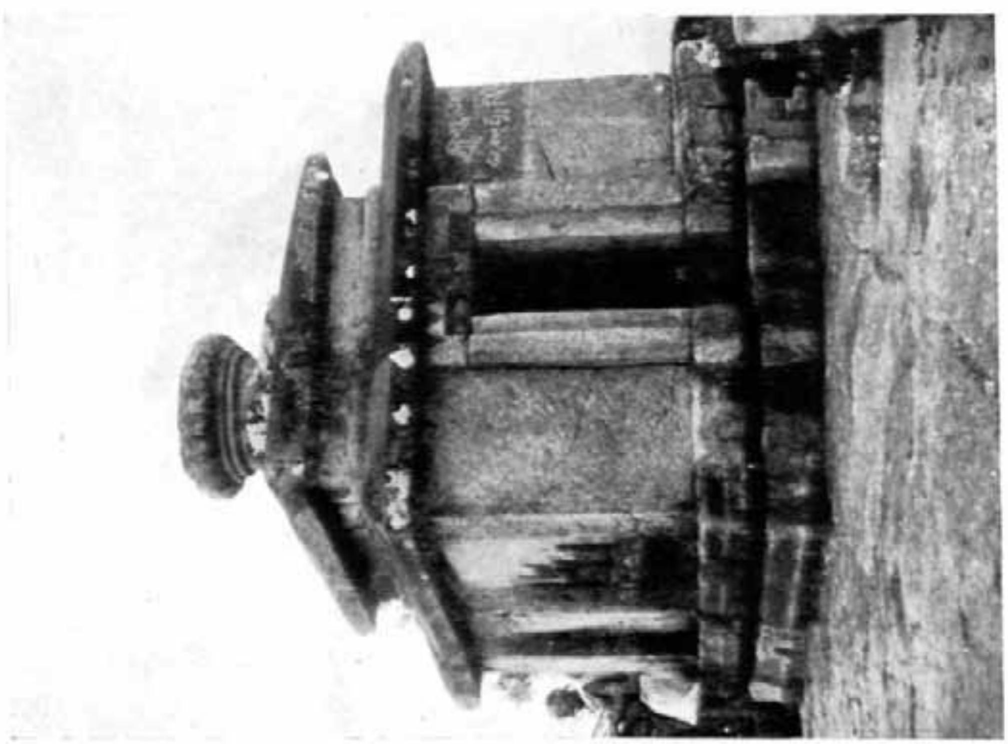


A

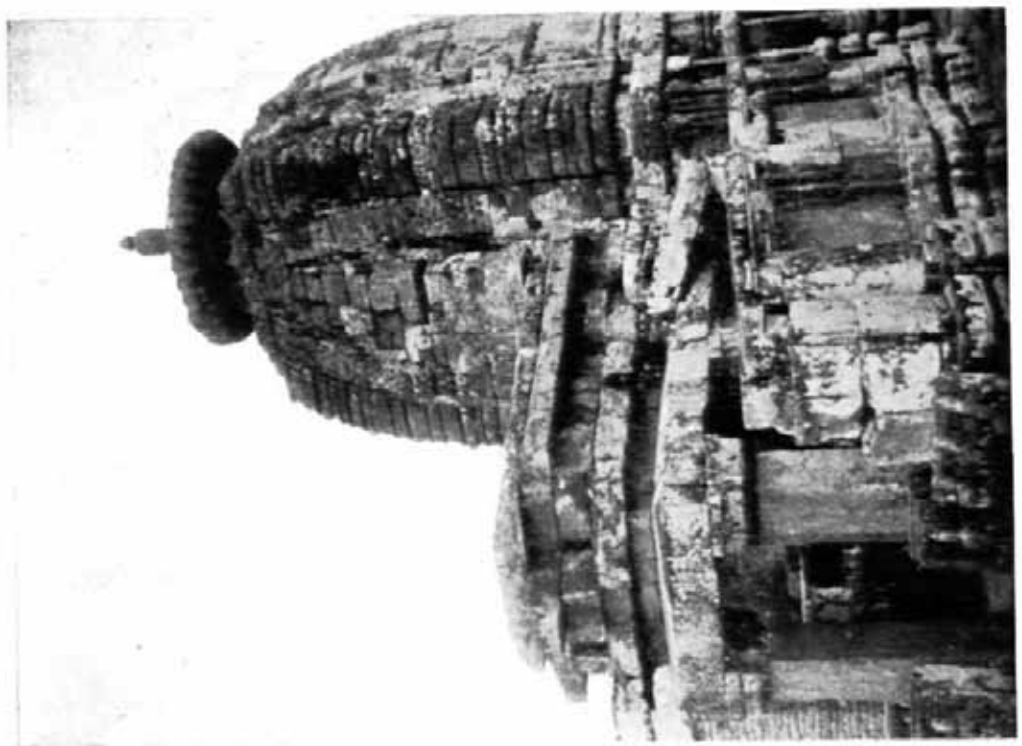


B

Kallambalu : A, *image of Bhairavi and* B, *Sannathi* : *ayaka pillar* *See p.* 29



A



B

A, *Nilakanthesvara temple at Jogamunda hill*; B, *Mallikesvara temple at Koraput.* *See p.* 29

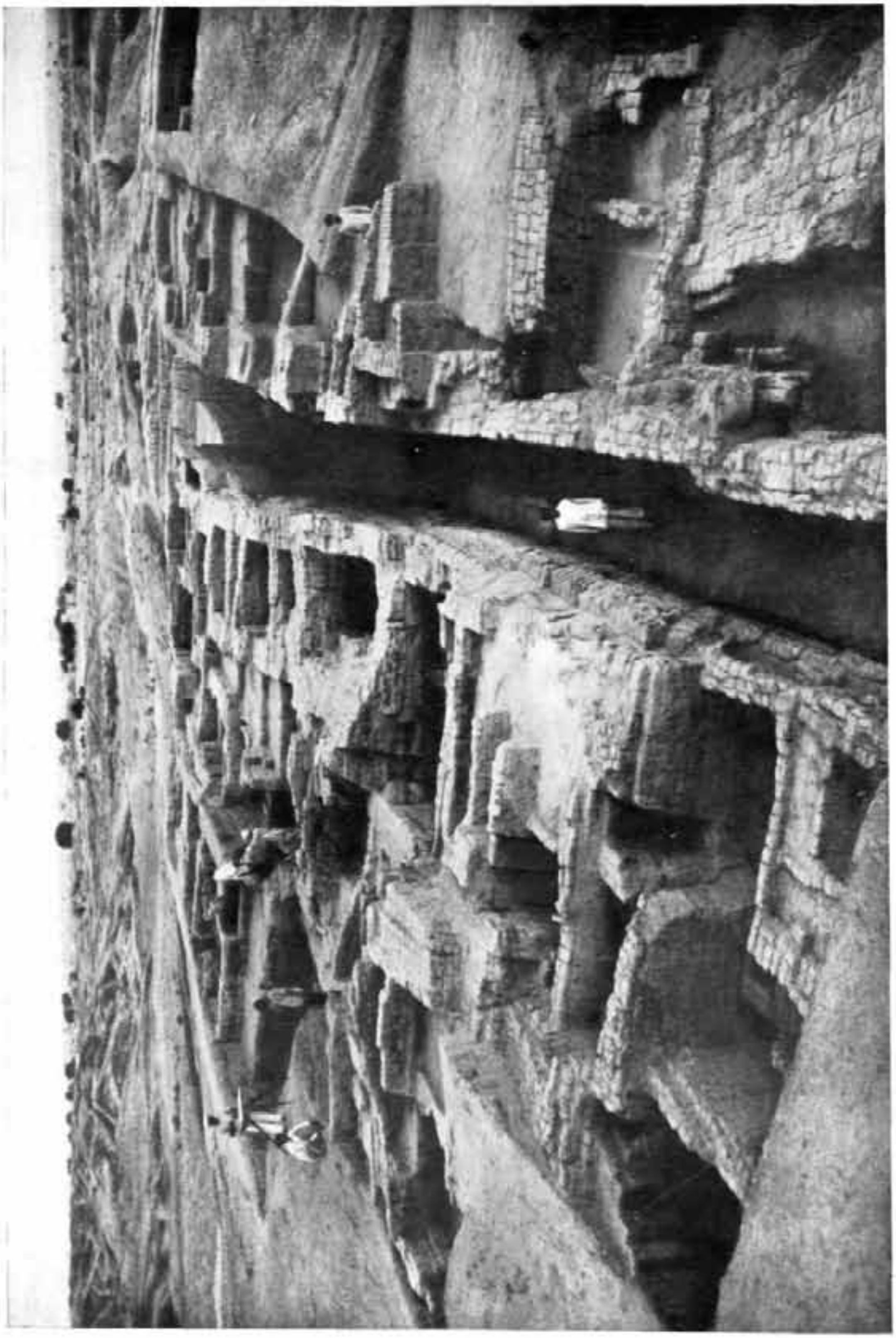


A

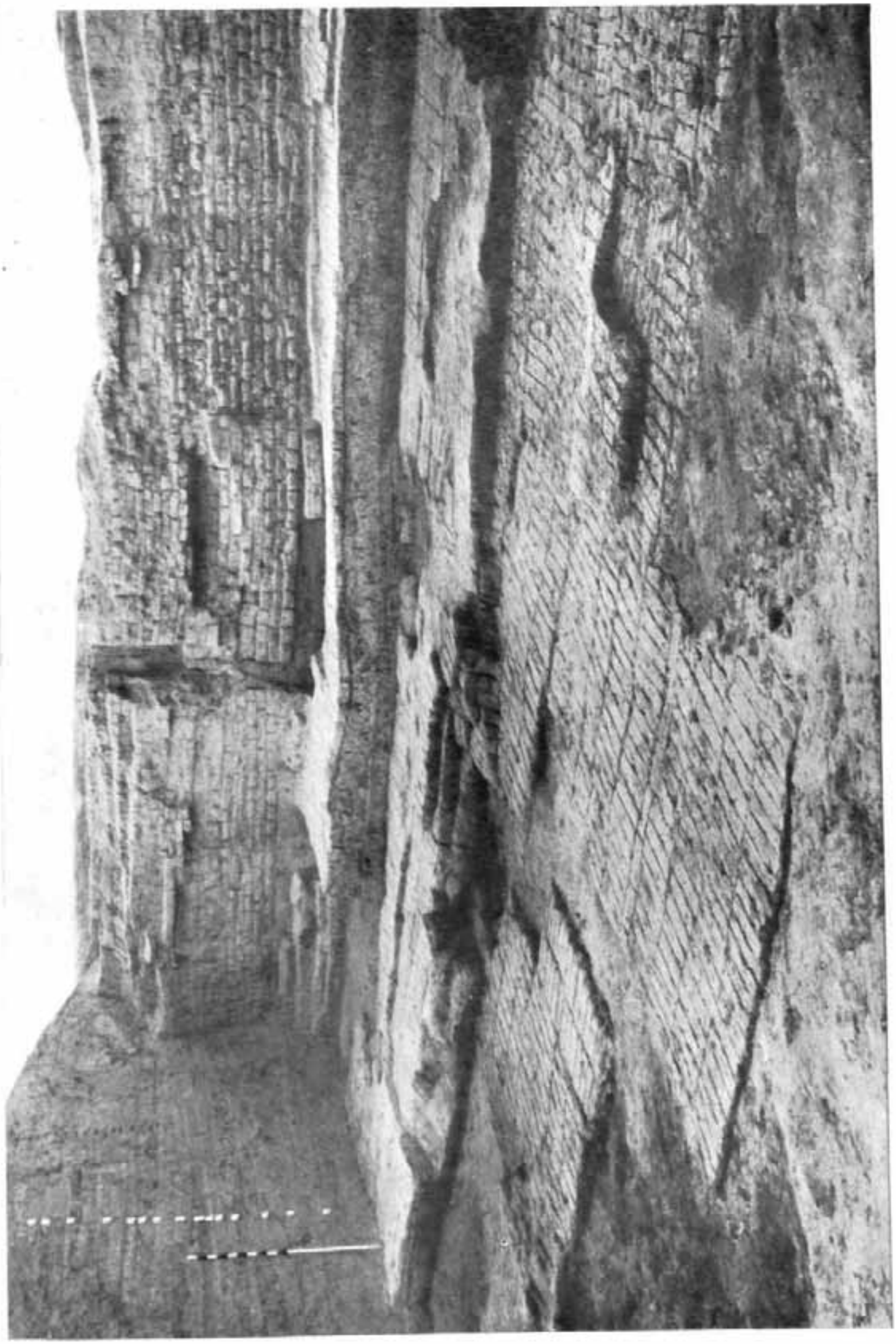


B

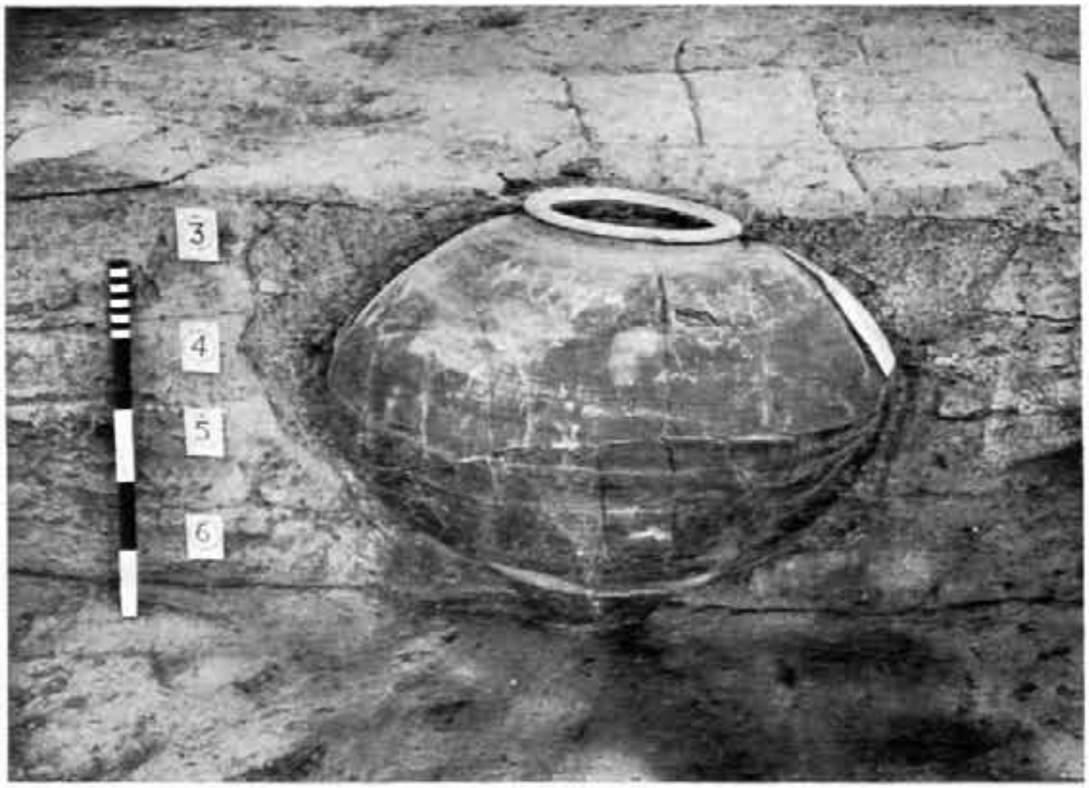
Kalibangan, KLB–1 : A *and* B, *north-western corner bastion.* *See p. 31*



Kalibangan, KLB–1 : house blocks in northern half of citadel. *See p. 32*



Kalibangan, KLB–1 : structural phases of platforms and pavements. *See p. 32*

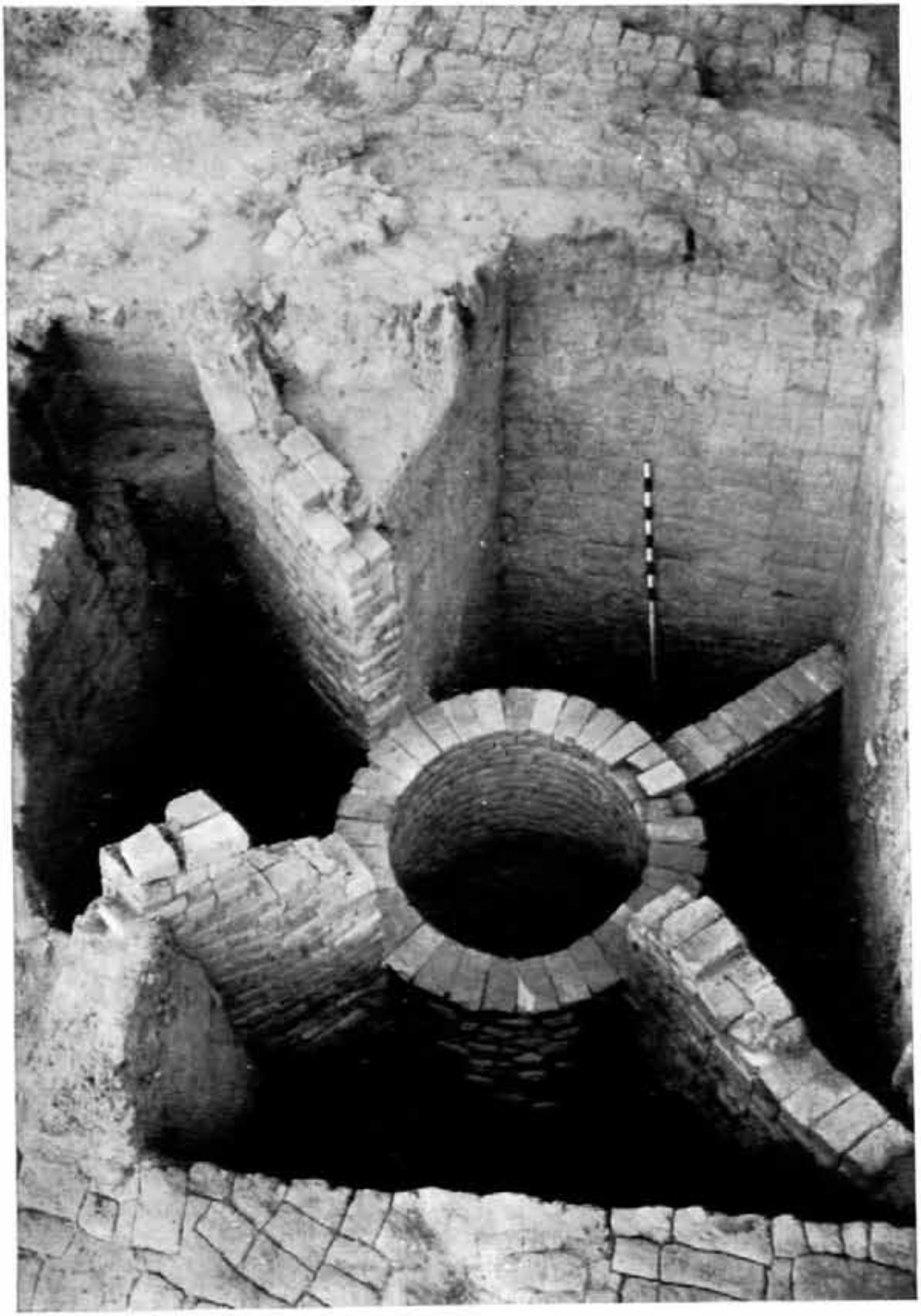


A

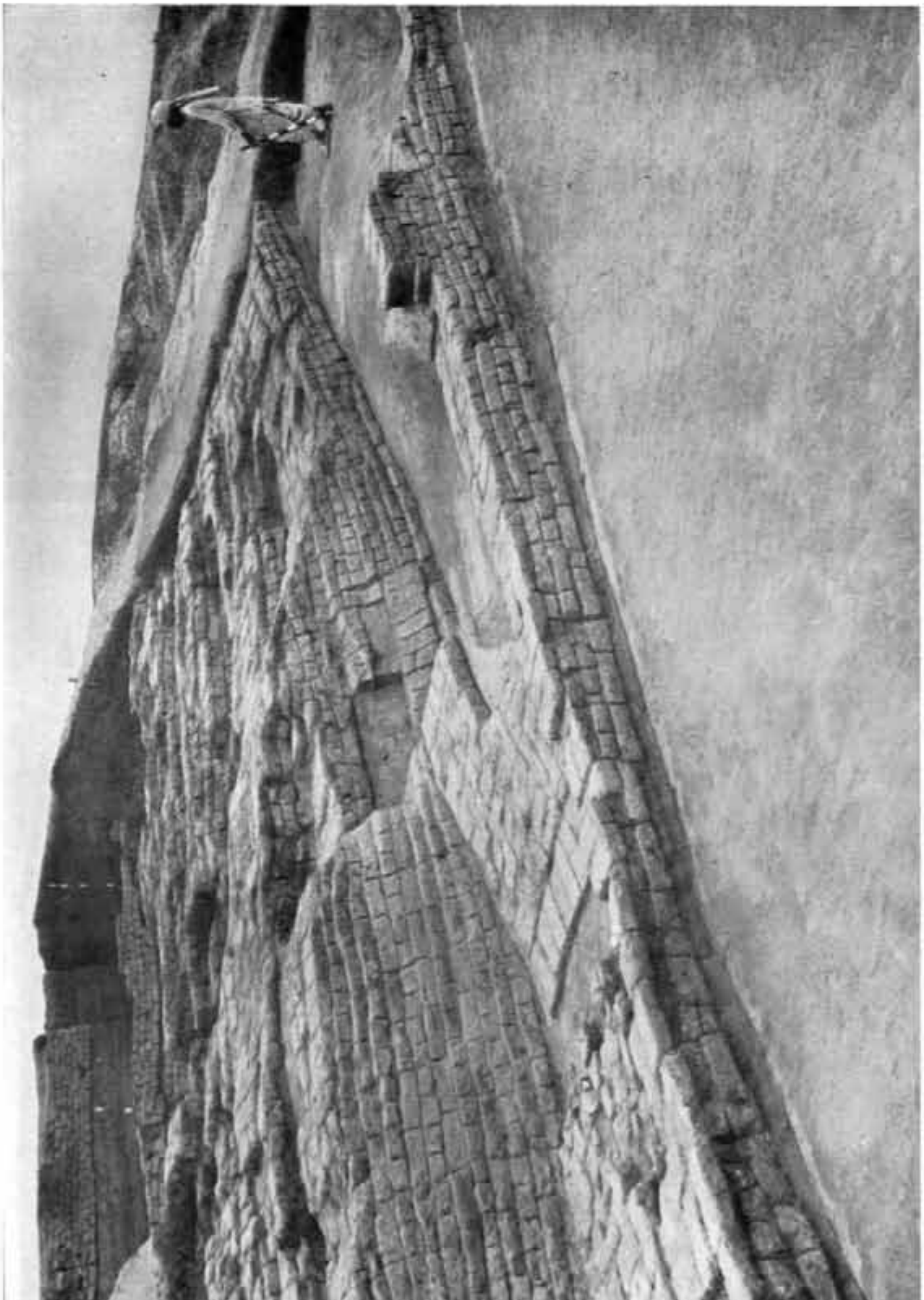


B

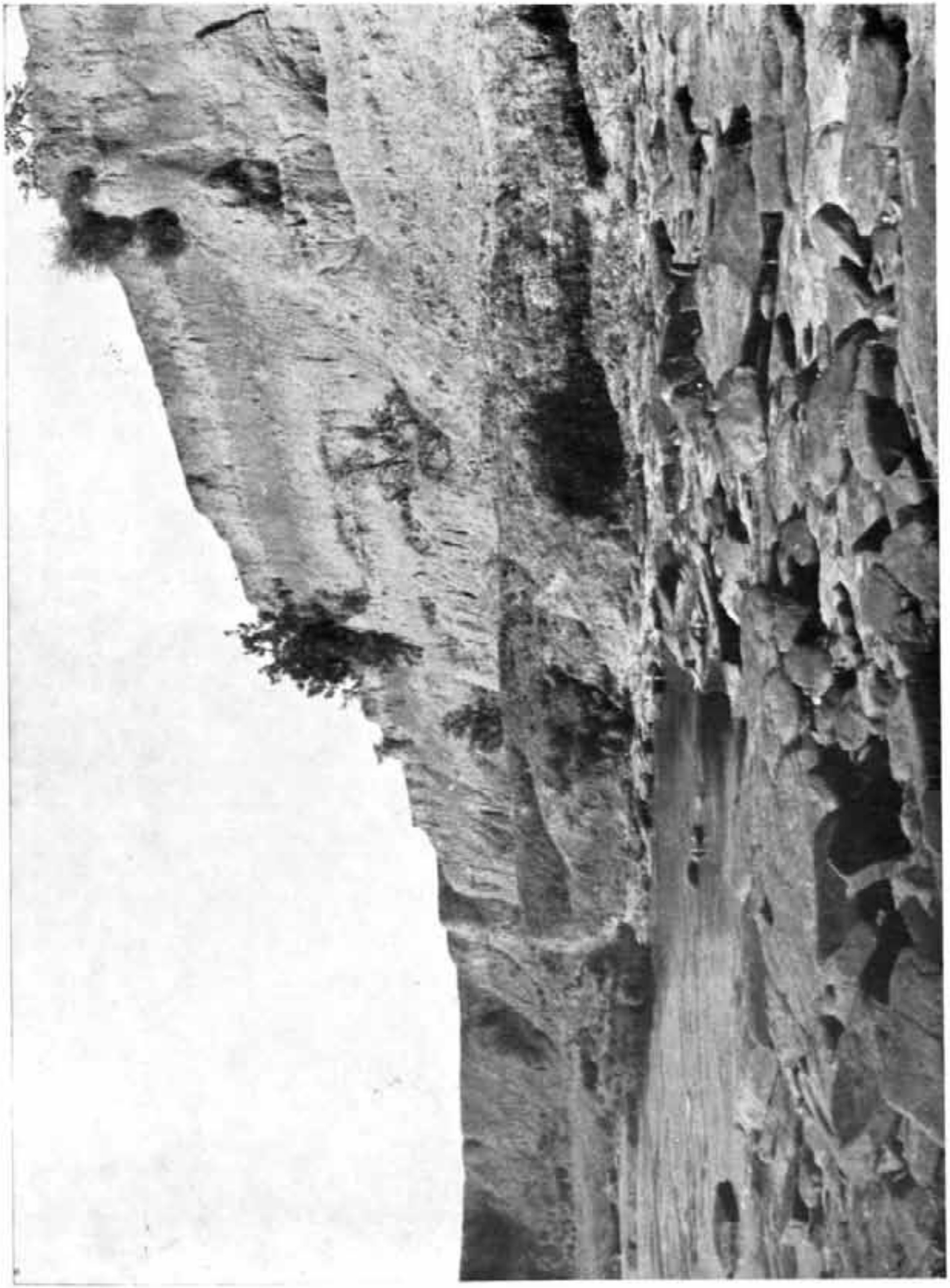
Kalibangan, KLB–1 : A, *inscribed pot*, B, *brick-lined pit with animal bones*. *See p. 32*



Kalibangan, KLB–1 : brick well supported by radial walls on platform. *See p. 32*



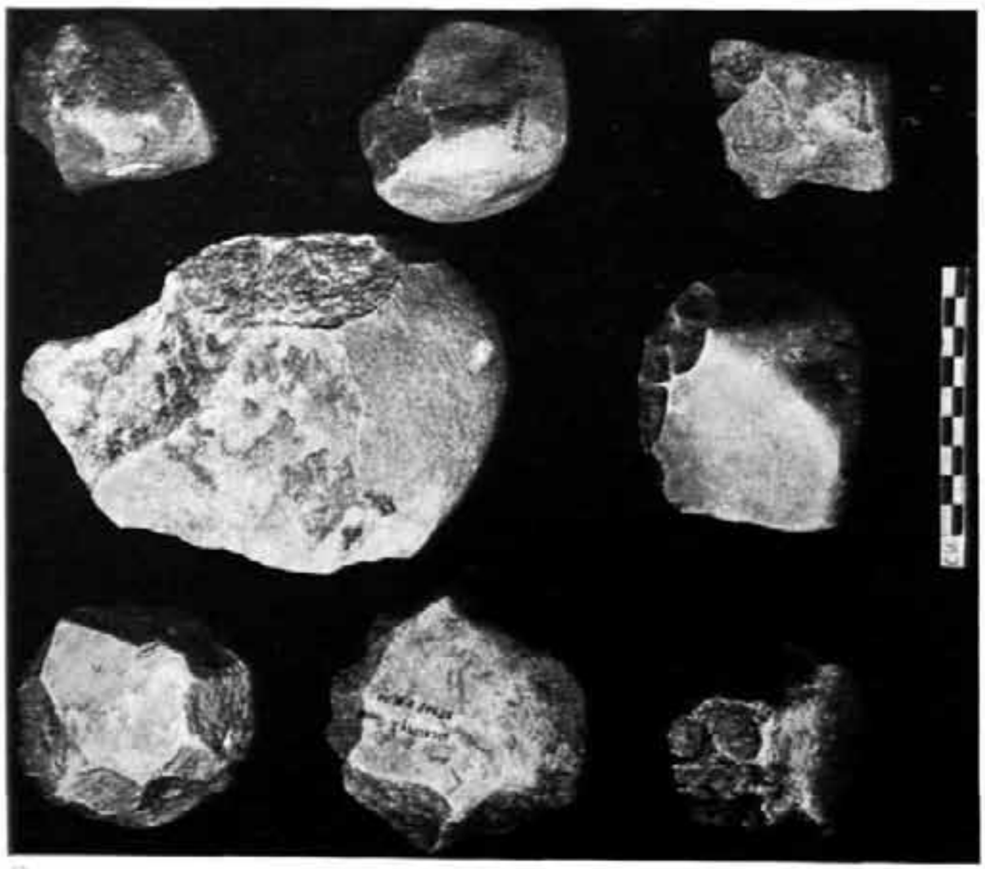
Kalibangan, KLB-2 : mud-brick fortification wall on eastern side. *See p. 32*



Gāldahawa : cliff-section on the Belan. *See p. 35*

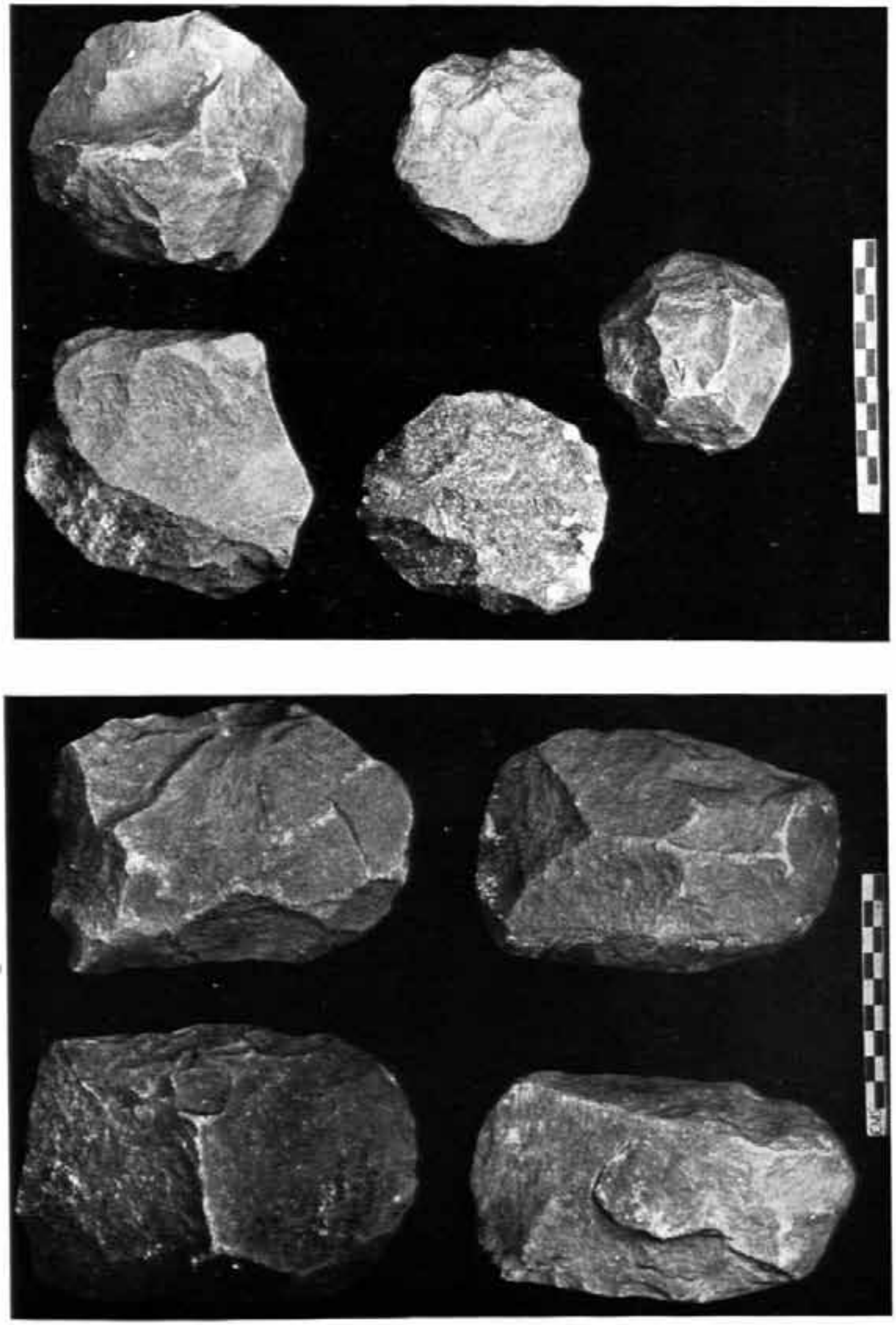


B



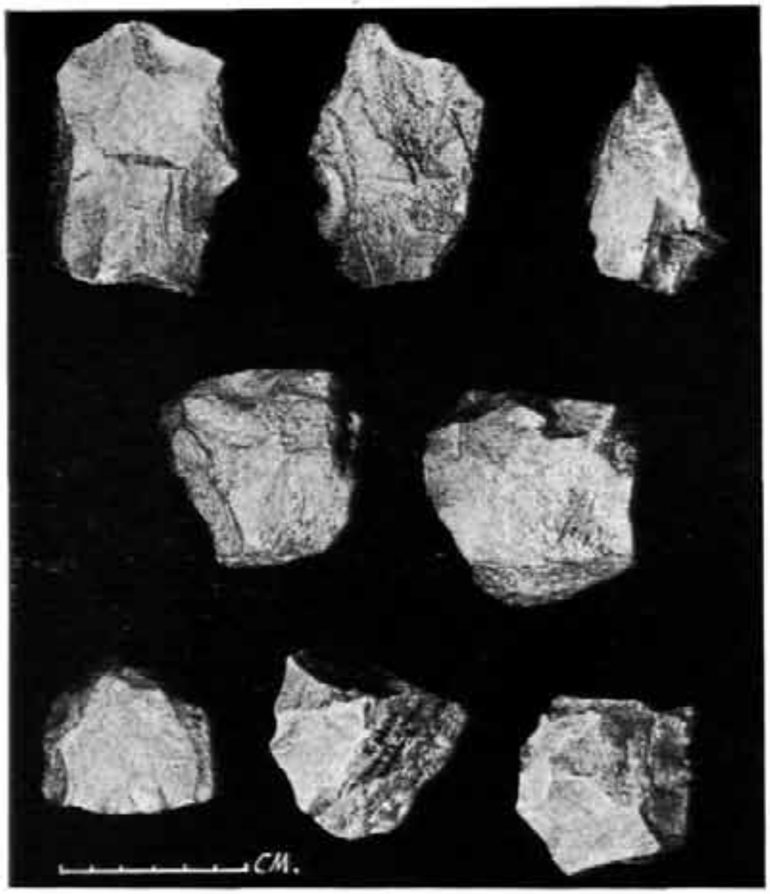
A

Belan and Seoti : A, bifacial and unifacial pebble tools; B, Early Stone Age tools. *See p. 35*

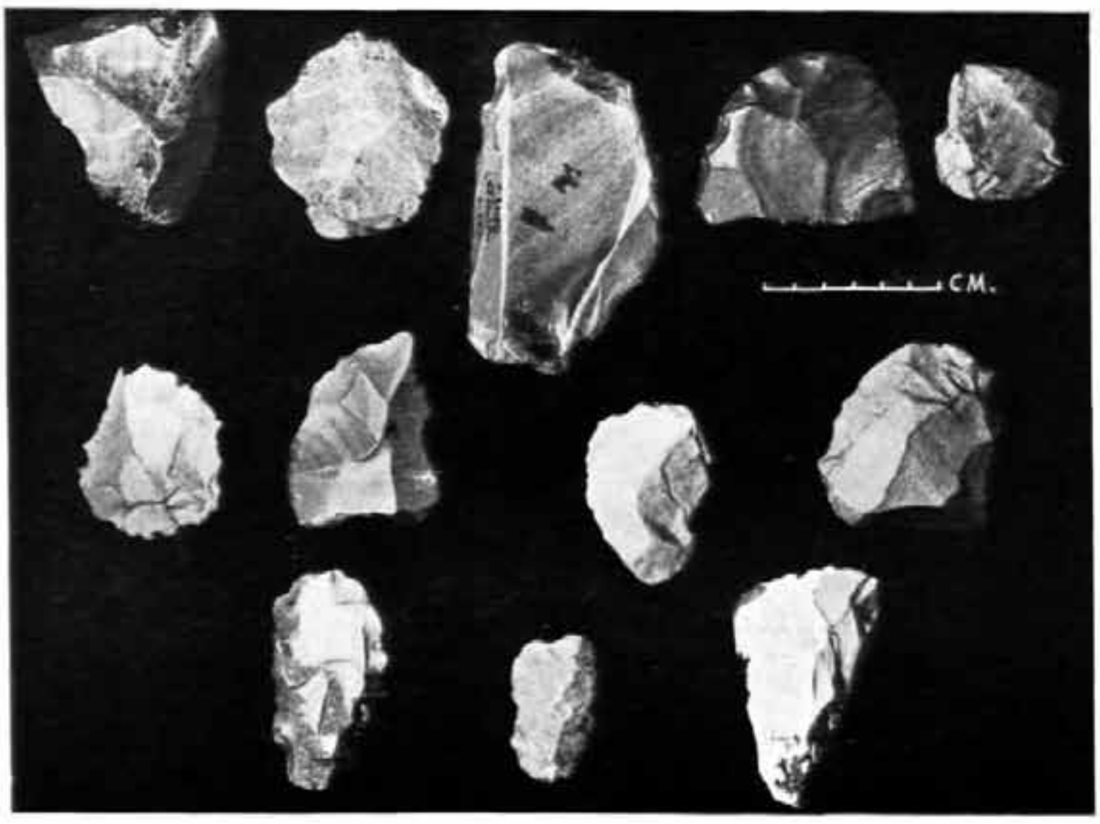


A B

Belan and Seoti : A, cleavers of Early Stone Age; B, Early Stone Age tools. *See p. 35*

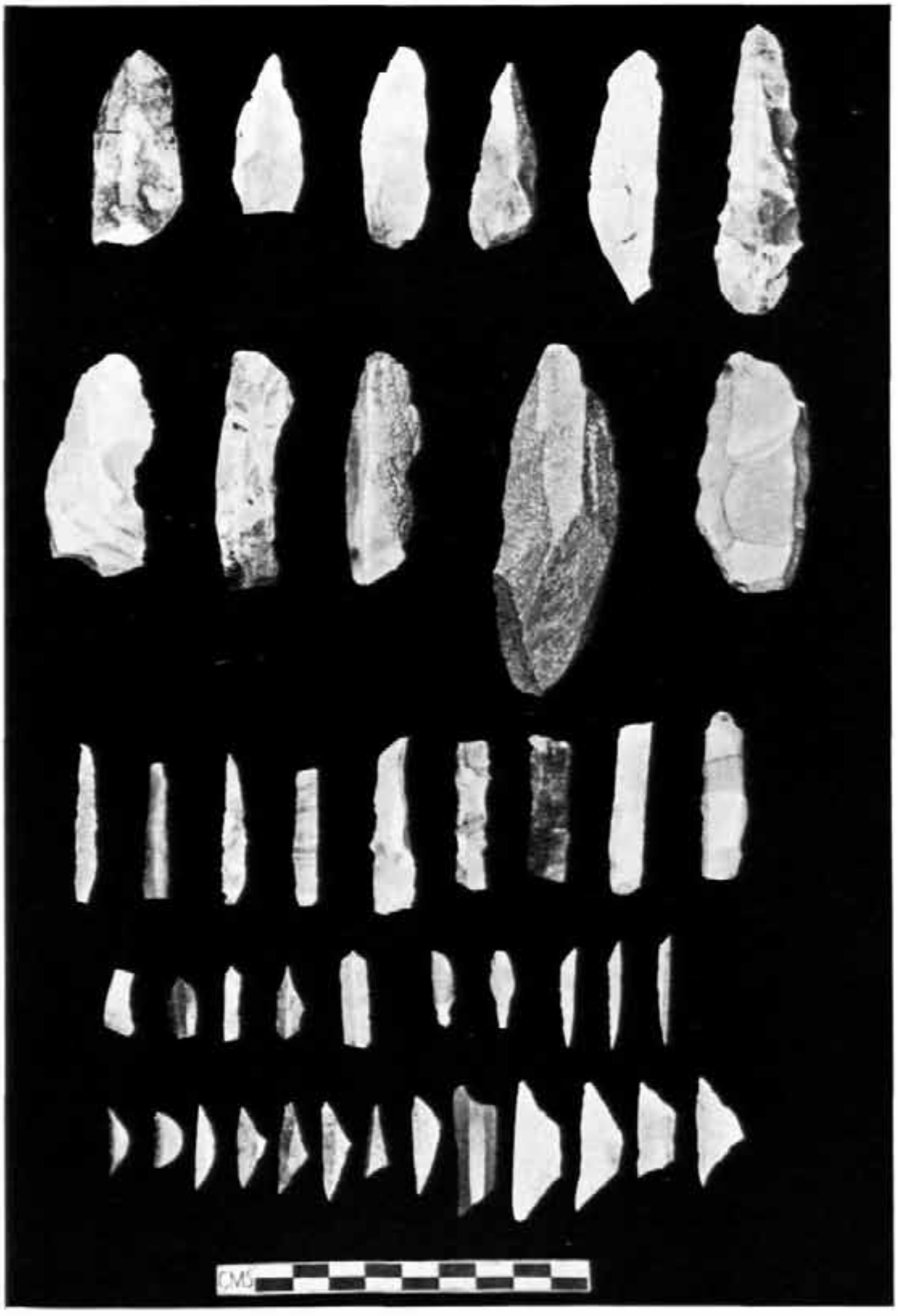


A



B

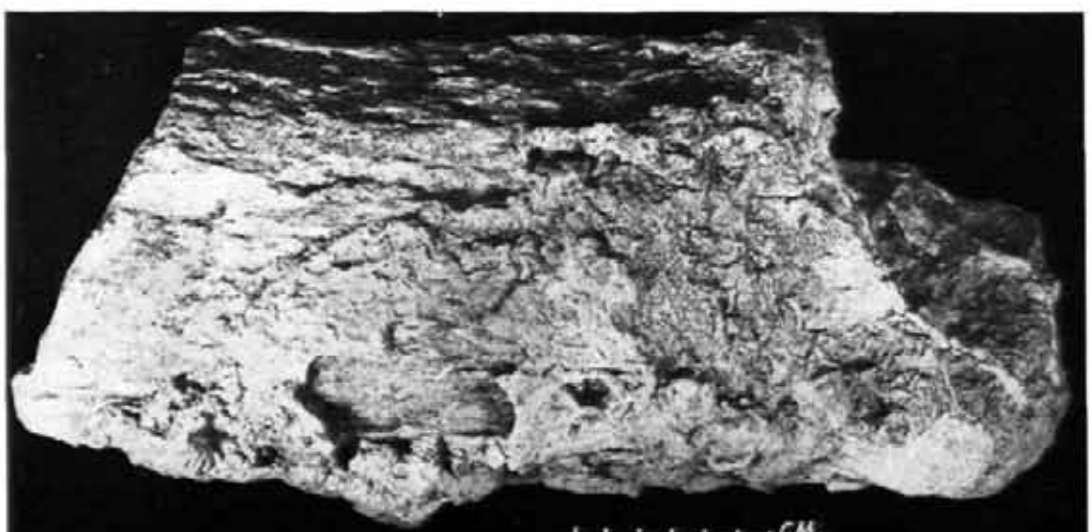
Belan and Seoti : Middle Stone Age tools ; A, on chert ; and B, on quartzite. *See p. 35*



Belan and Seoti : microliths. See p. 35

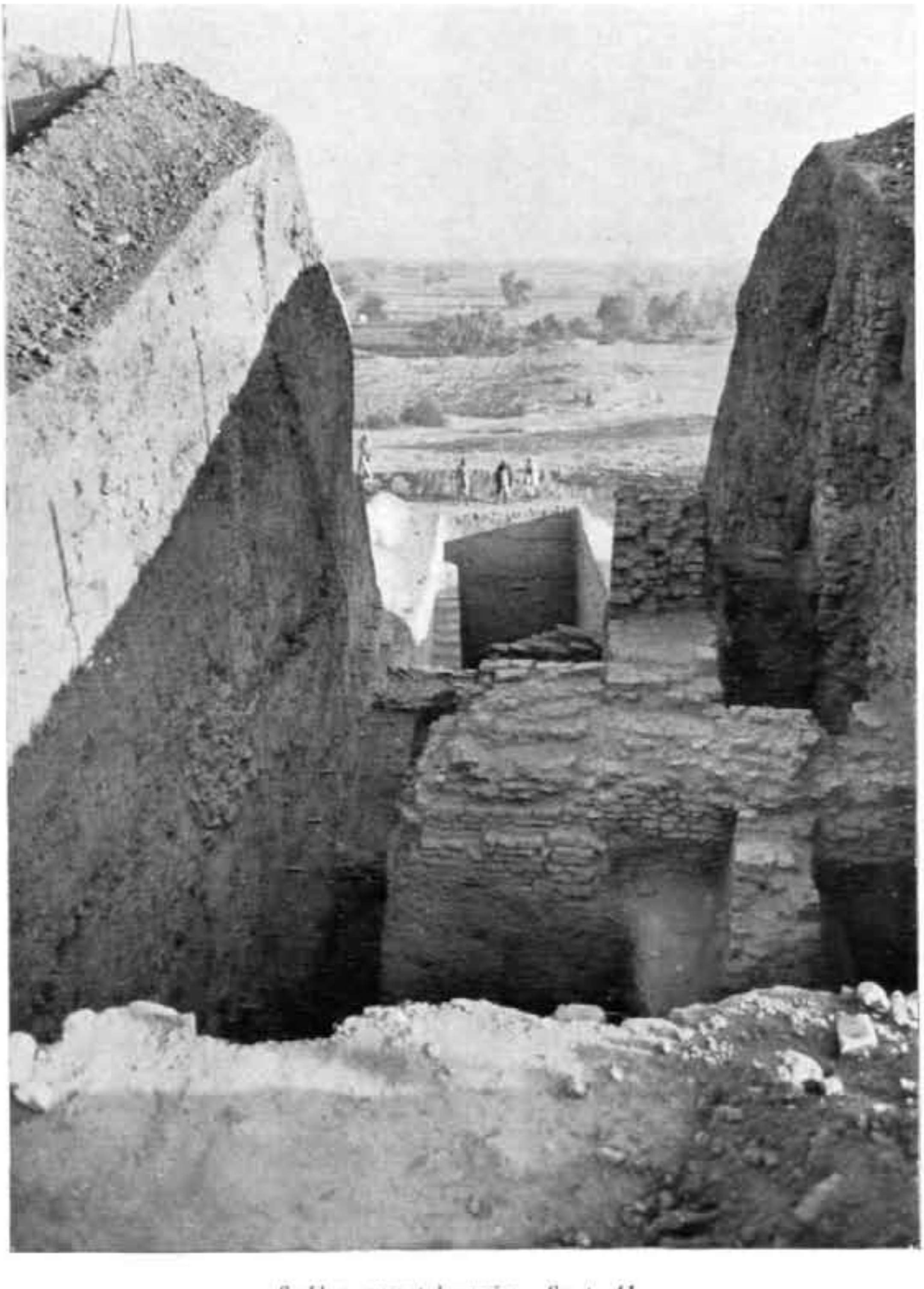


A



B

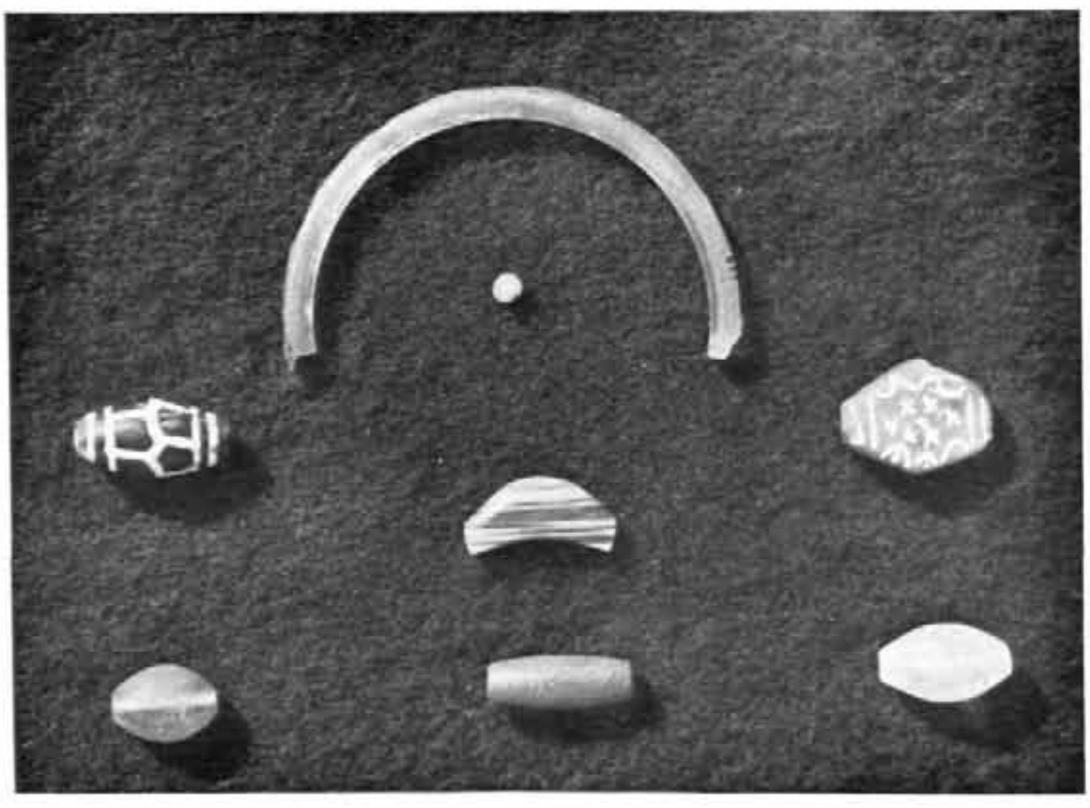
Galdahawa : A *and* B, *fossil of Bos namadicus.* *See p. 35*



Sonkh : excavated remains. *See p. 41*

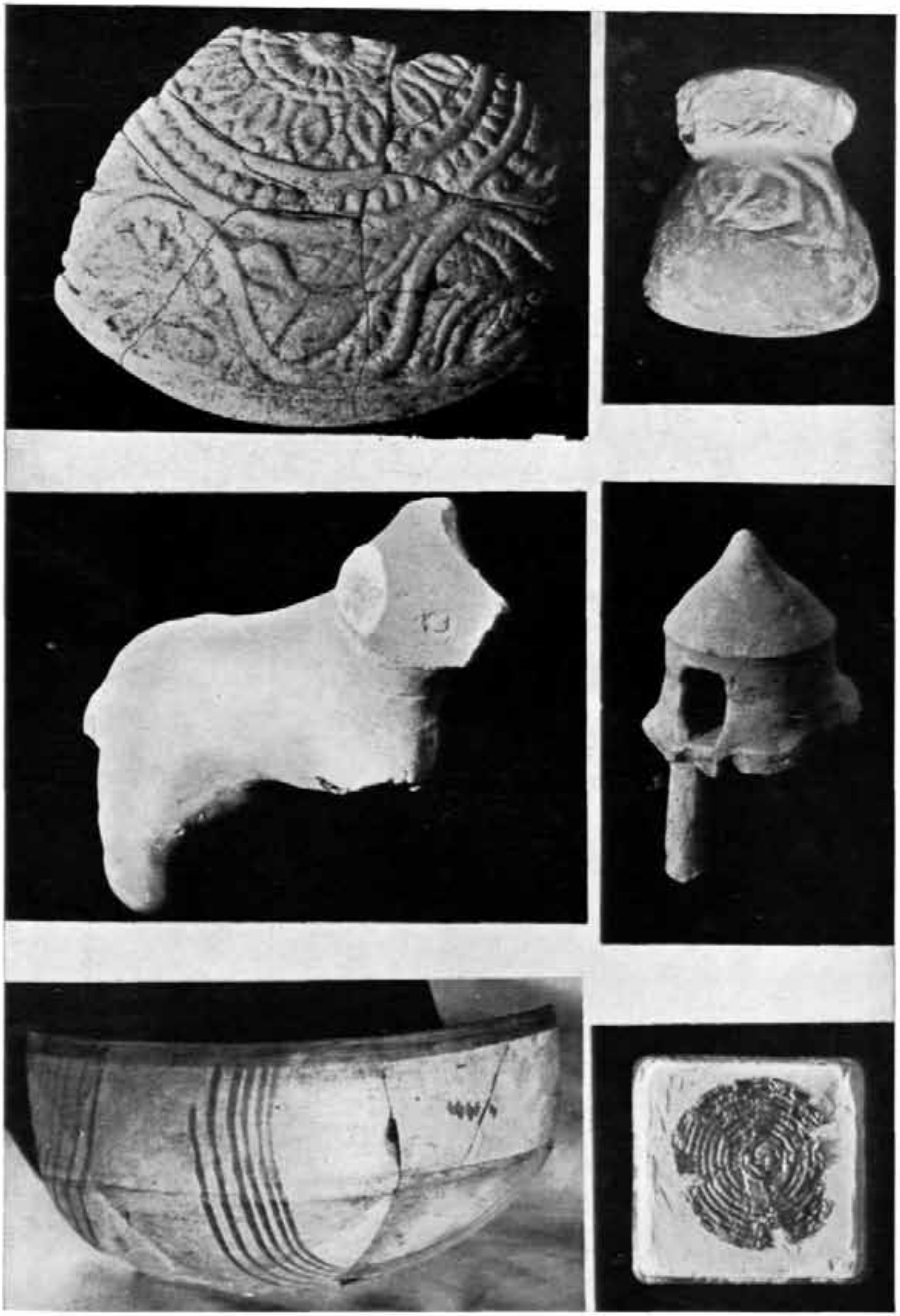


A

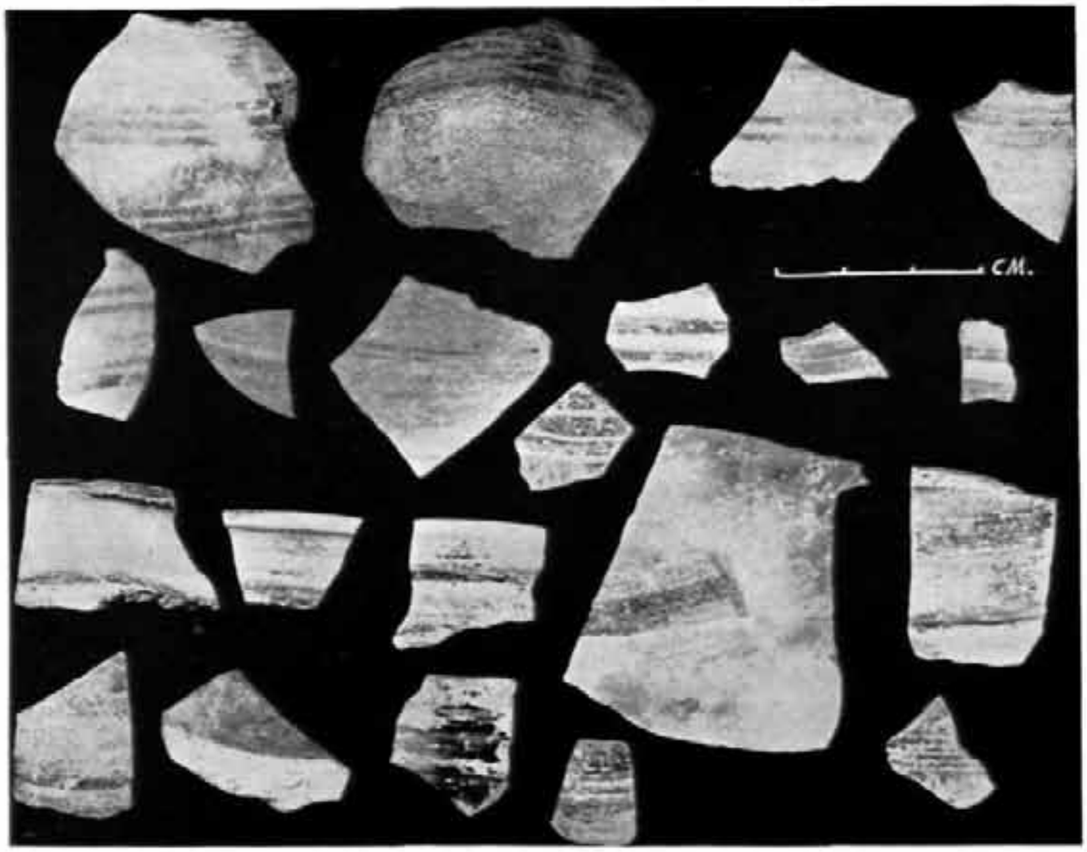


B

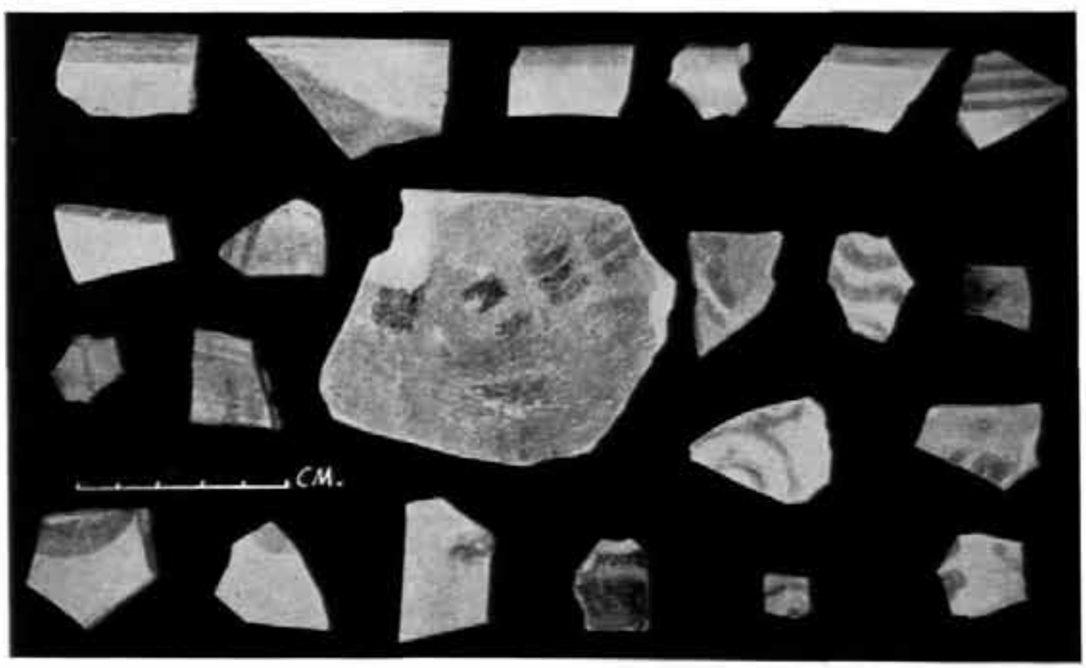
Sonkh : A, *structures of phases VII to IX;* B, *beads and a bangle.* *See pp. 41 and 42*



Sonkh : Painted Grey Ware bowl and terracotta objects. *See p. 42*

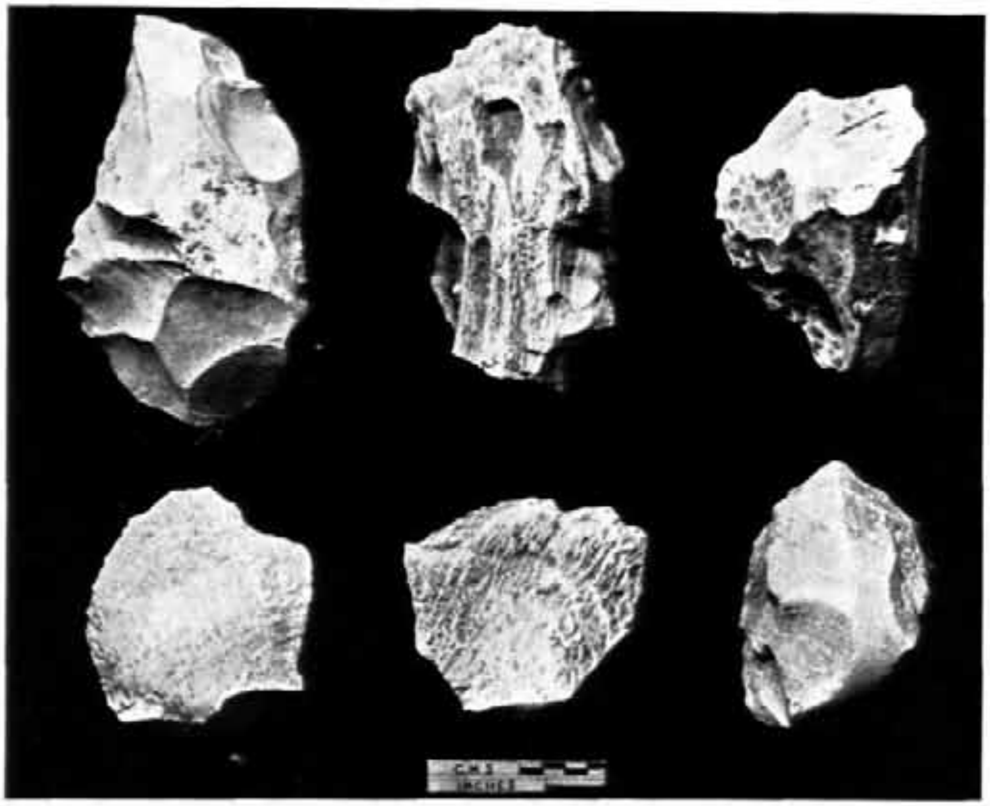


A

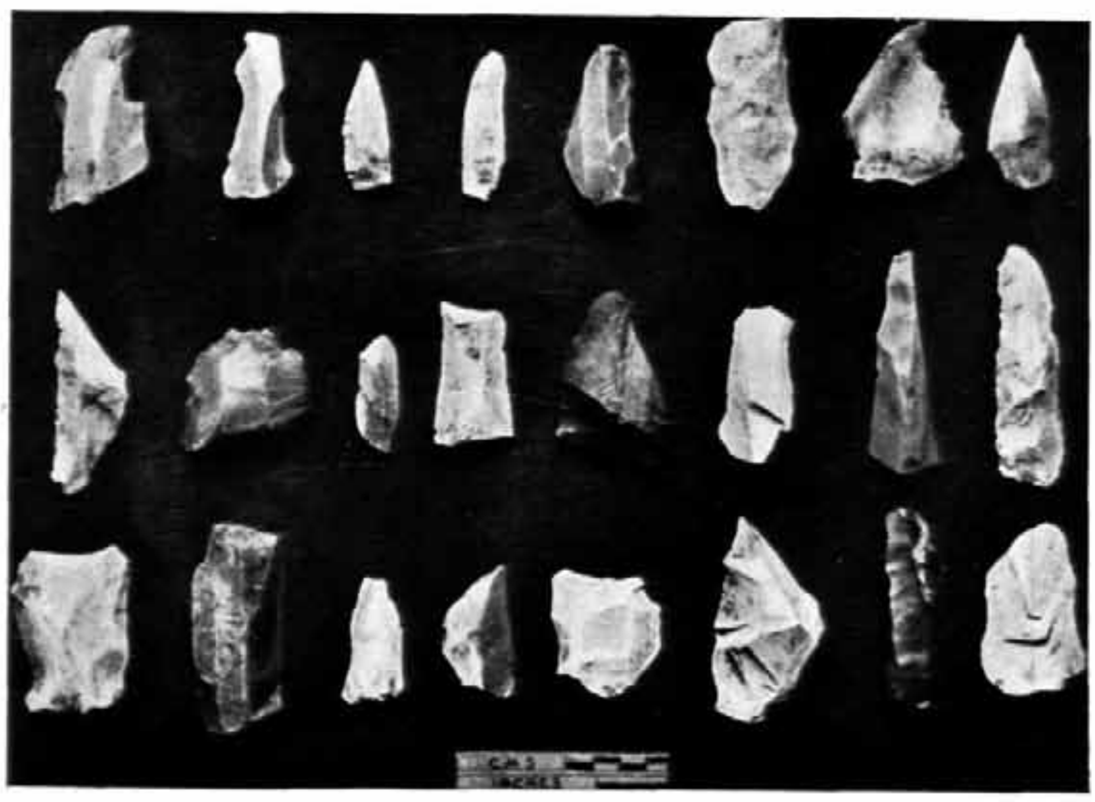


B

Baharia : A, *painted red ware*; B, *Painted Grey Ware*. *See p. 43*

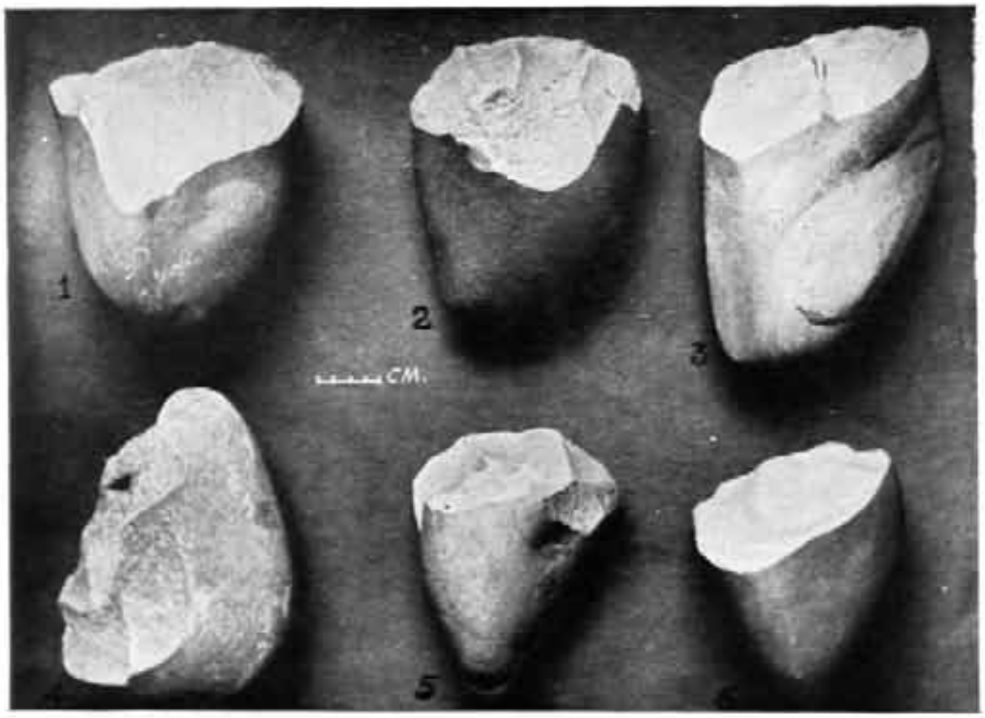


A

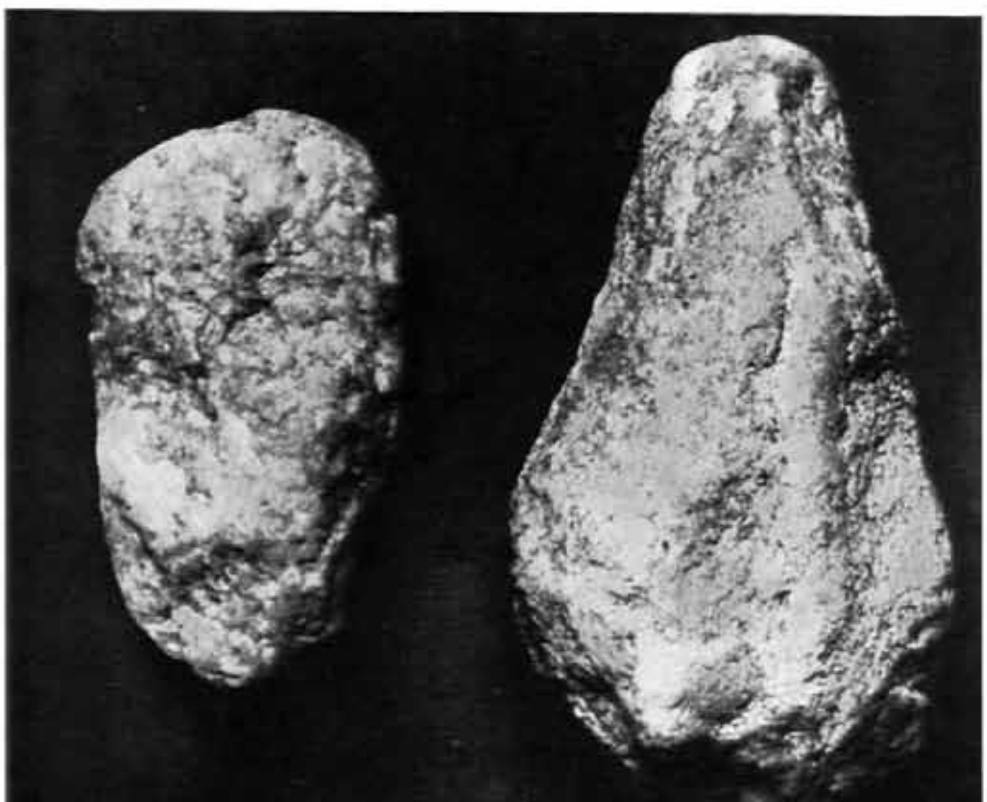


B

Bonkati : A, Early and Middle Stone Age tools; B, microliths. *See p. 44*

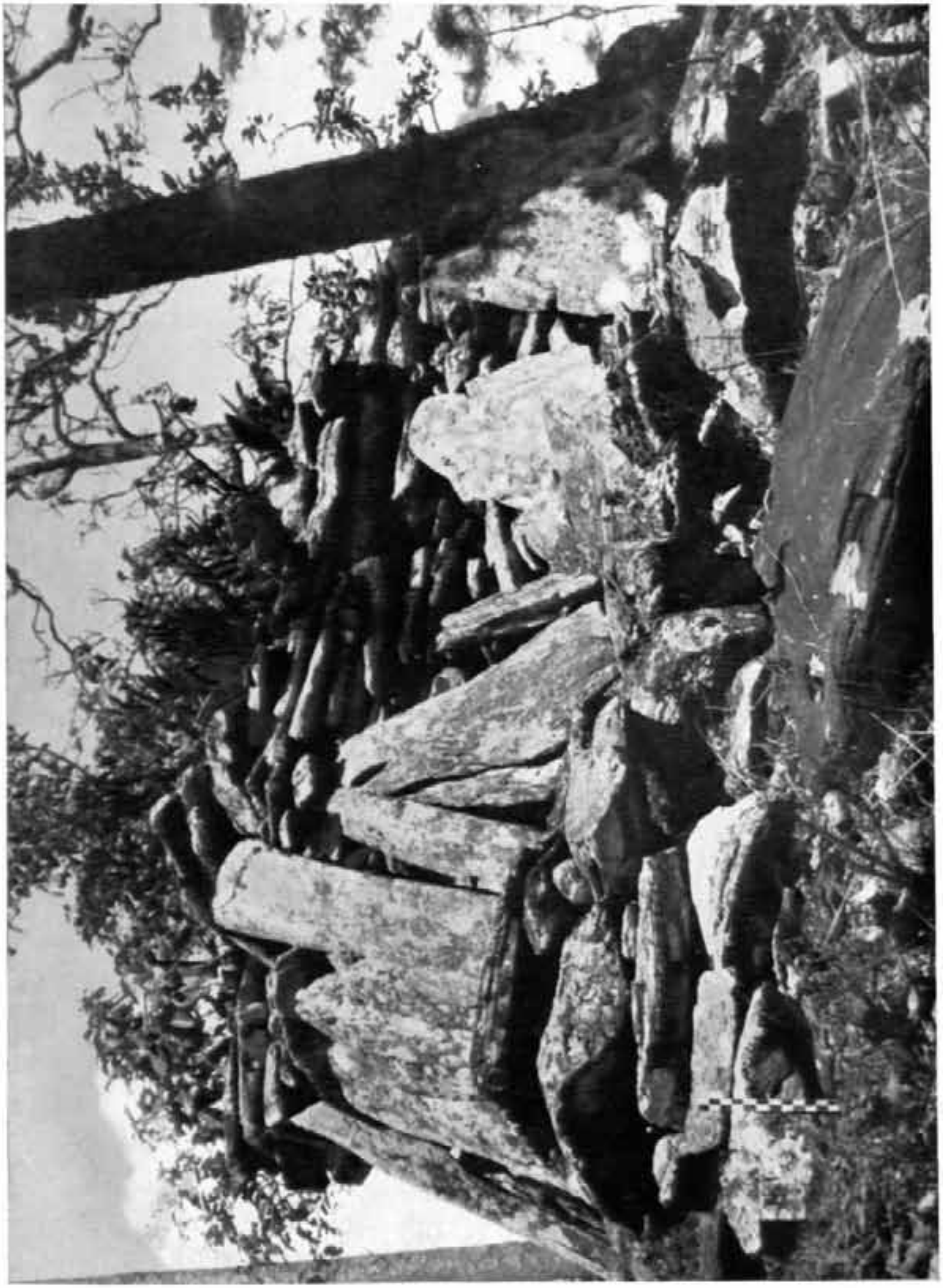


A

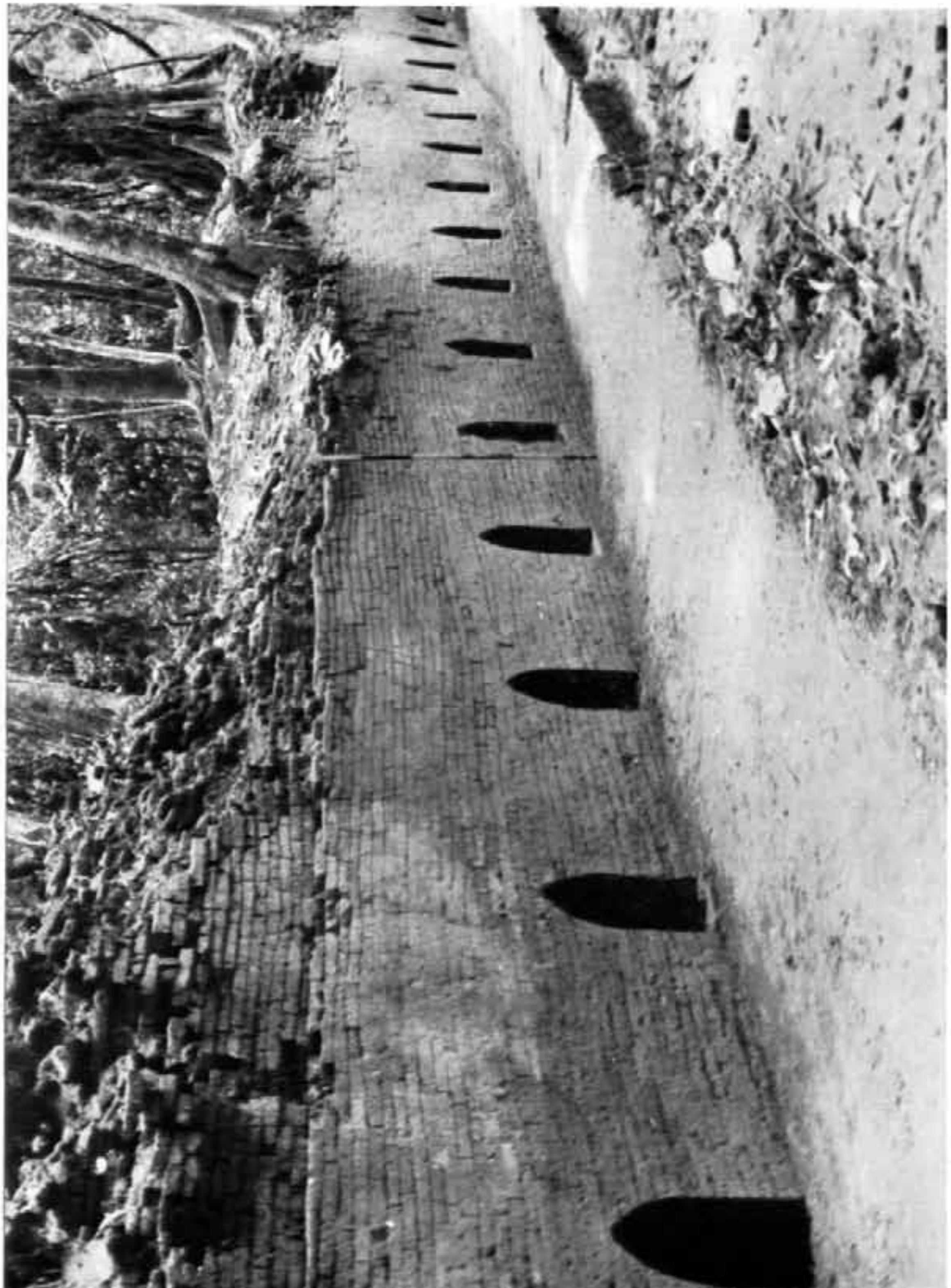


B

A, *pebble tools of lower palaeolithic period from Midnapore*; B, *Early Stone Age tools from Purulia.* *See p. 45*



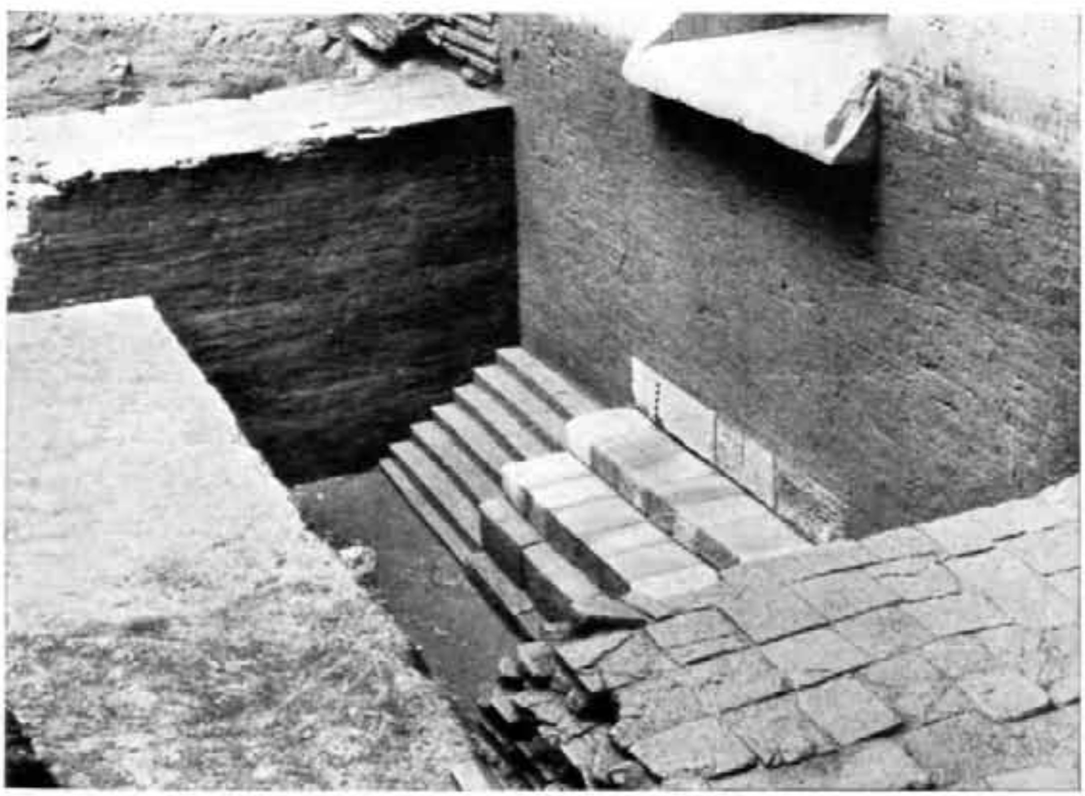
Badamtam forest : general view of one of the megaliths. *See p. 45*



Natrajar Garh : niches in the wall. *See p. 46*

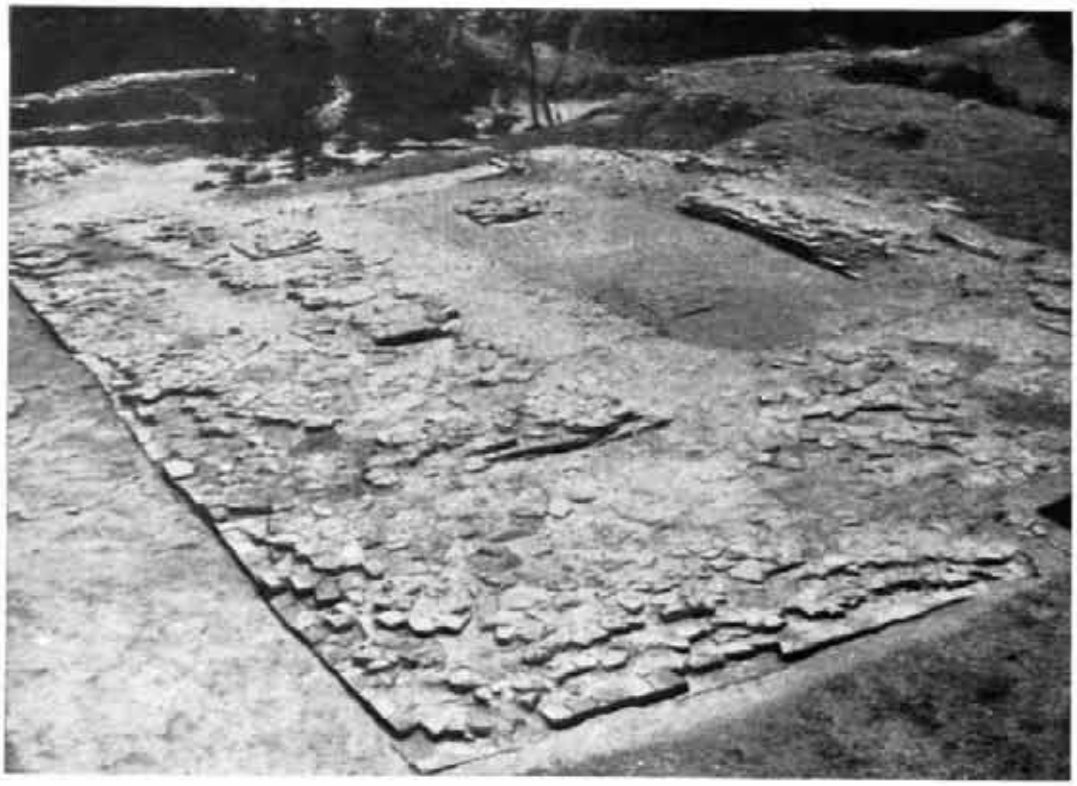


A



B

Nalrajar Garh : A, *brick staircase*; B, *foundation of southern wall.* *See pp.* 45 *and* 46



A



B

Chandraketugarh, Khana-Mihirer Dhipi : A, *porch of the main temple;*
B, *foundation of miniature shrine.* *See p. 48*



A



B

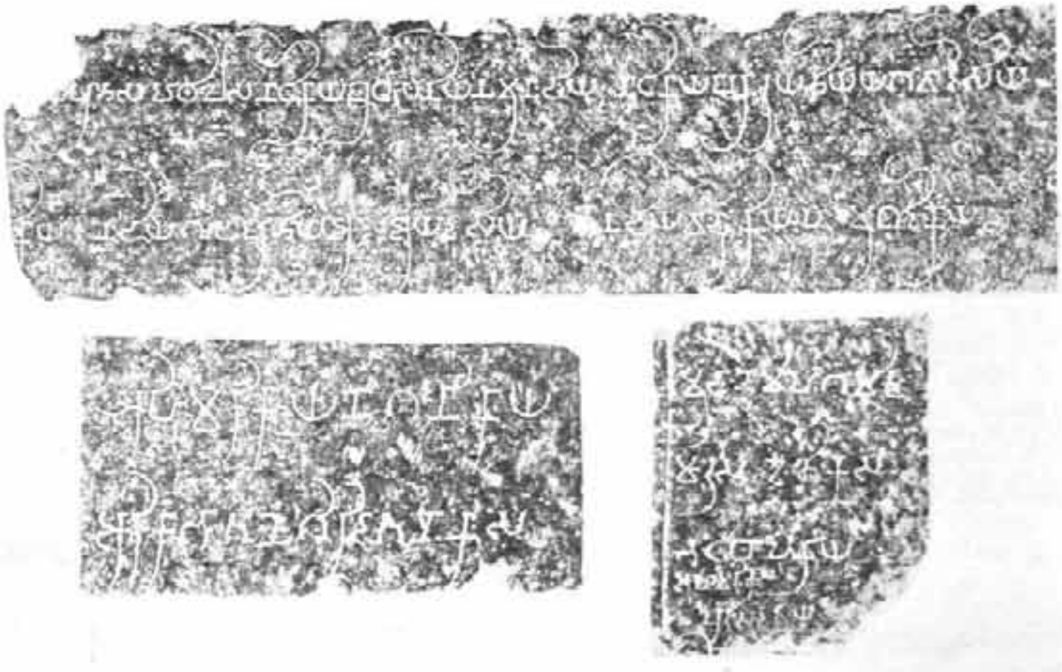


C

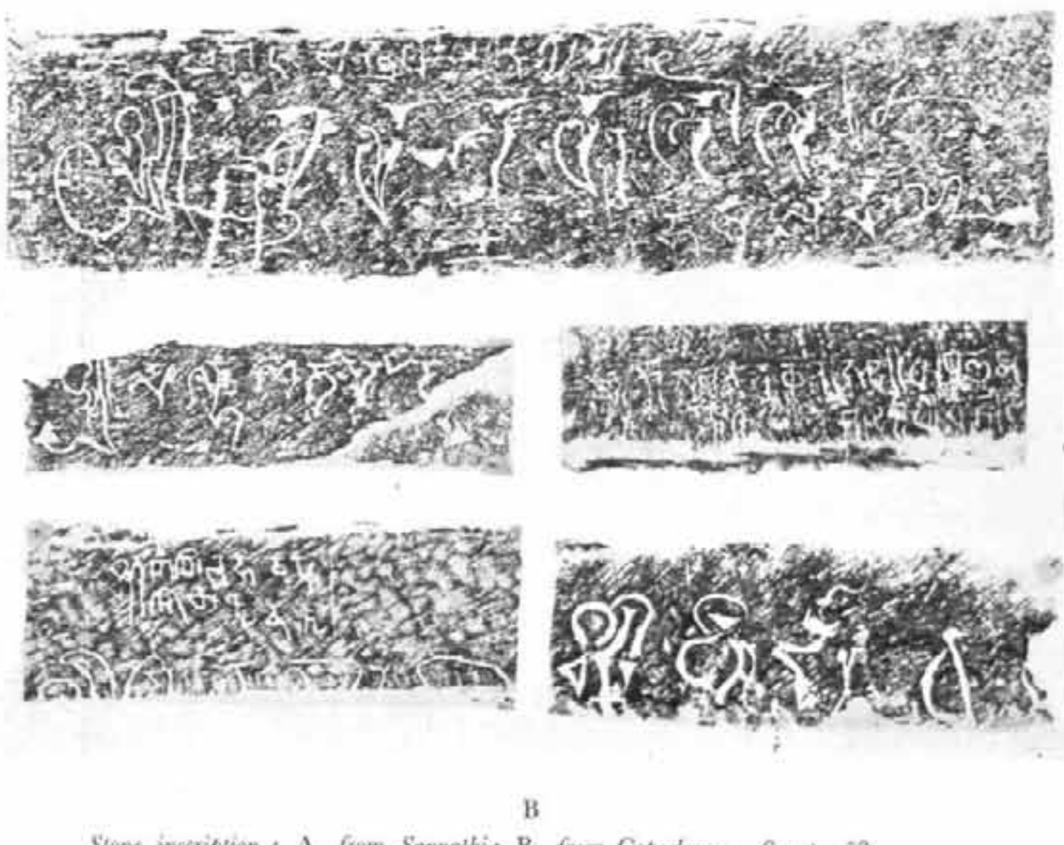


D

Chandraketugarh : A, *terracotta figurine*; B-D, *terracotta tablets. See p. 48*



A



B

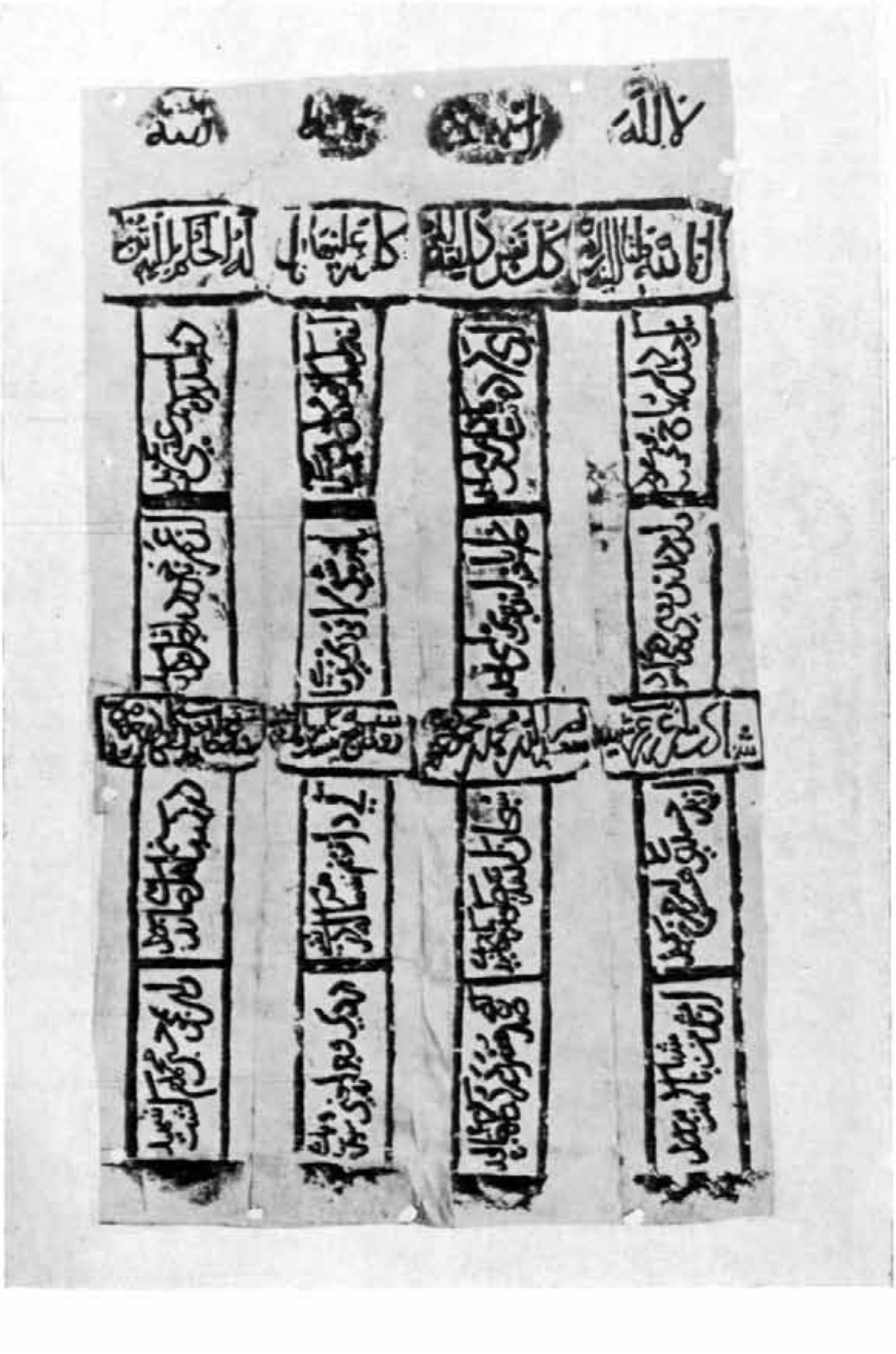
Stone inscription : A, *from Sannathi;* B, *from Gopeshwar.* *See p. 53*



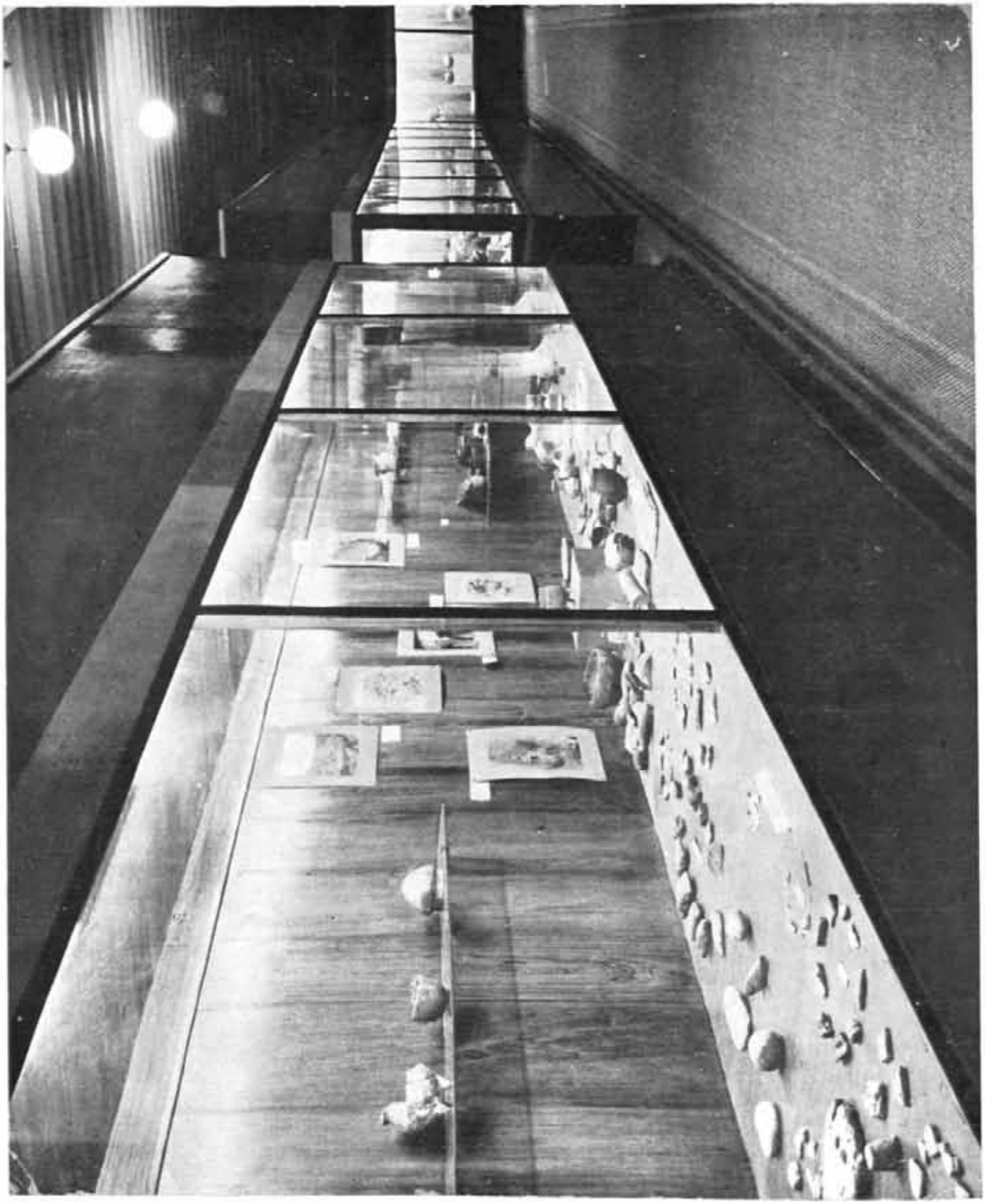
Siroli : inscription of Sarvavarman. See p. 54



Guna : inscription of Ahmad Shah. See p. 56



Bilram : inscription recording the death of Nasirud-Din Muhammad. *See p. 61*





A



B

Museum and picture gallery, Baroda : A, *bronze seat*; B, *stone Varaha.* *See p. 75*

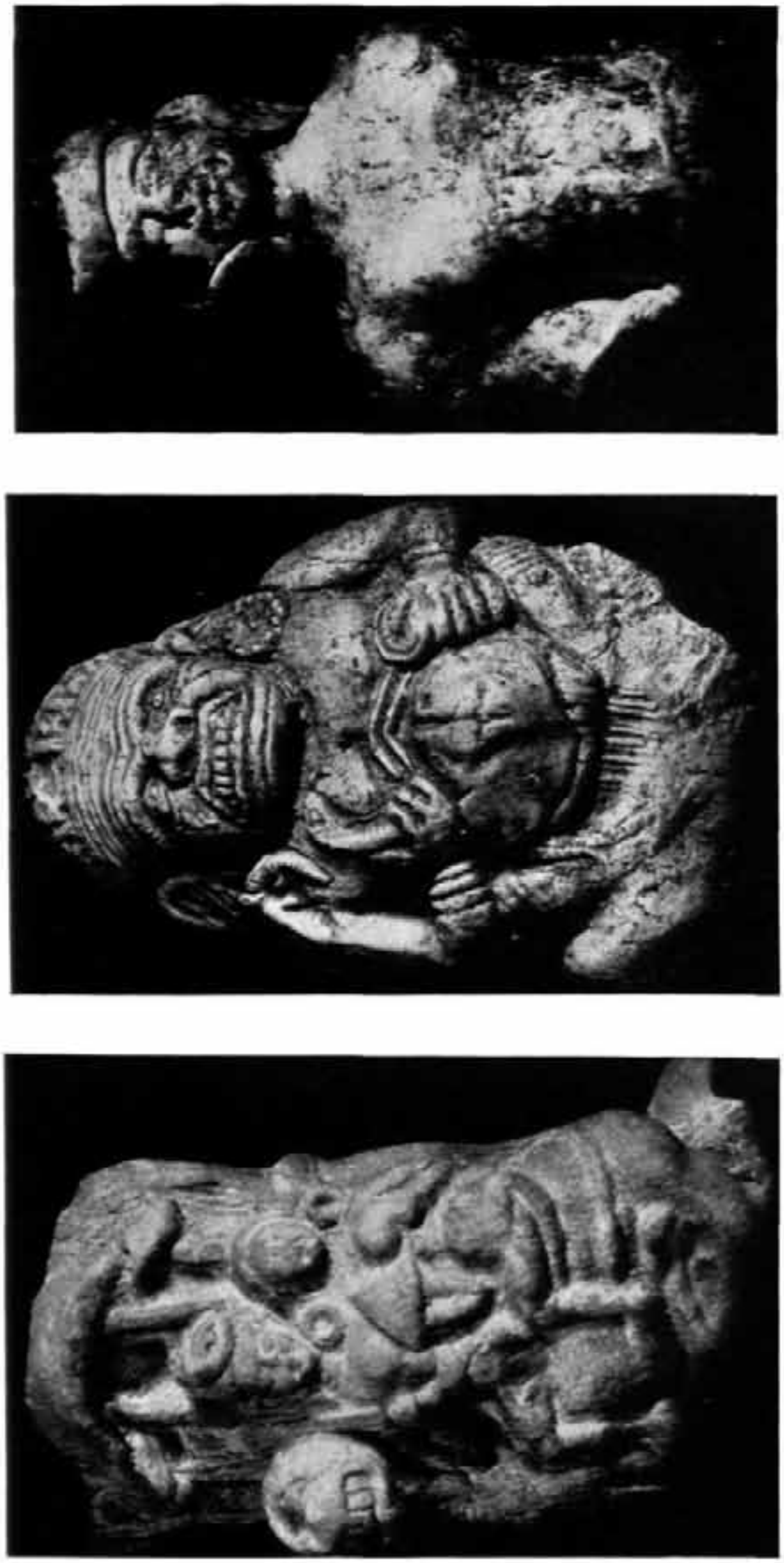


B



A

Prince of Wales Museum of Western India : A, *Ambika*; B, *Yaksha*. *See p. 76*



A B C

Asutosh Museum, Calcutta : A, *toy-cart*; B, *demon devouring tortoise; and* C, *terracotta figurine.* *See p.* 76



A



C



B

Asutosh Museum, Calcutta : A, *plam-leaf manuscript*; B, *bronze Gaja-Lakshmi*; C, *stone mould*. *See p. 76*



B



A

State Archaeological Gallery, West Bengal, Calcutta : A, *Sarasvati* and B, *Mahisasuramardini*. *See p.* 77



A

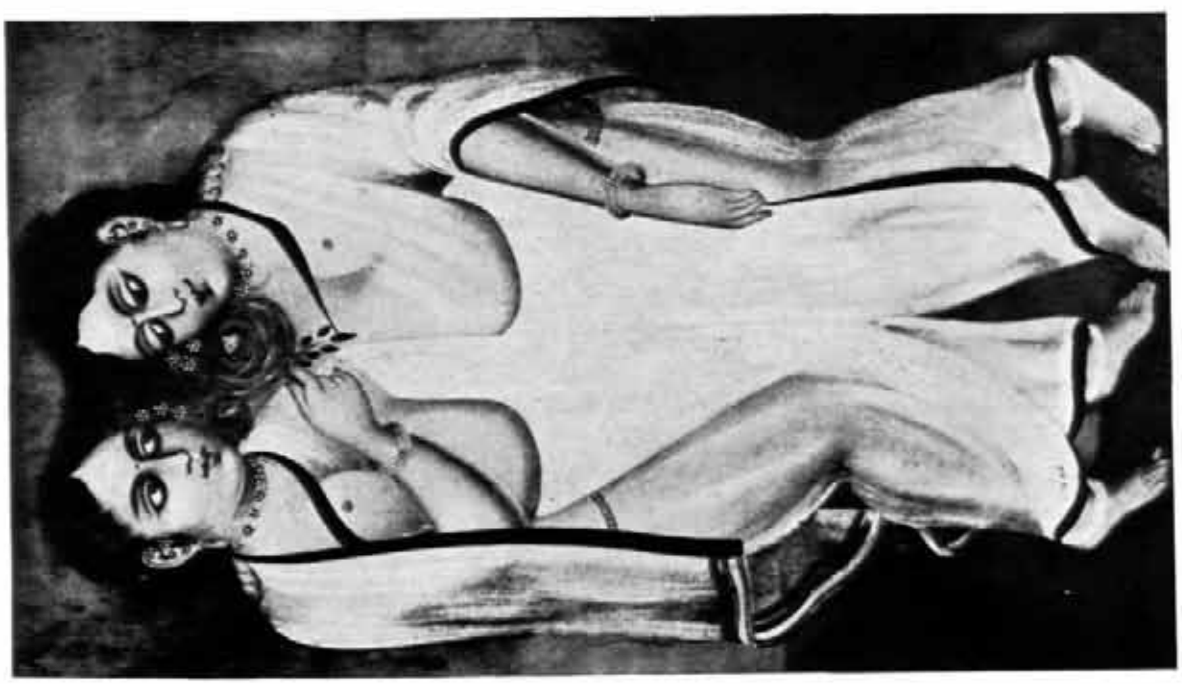


B



C

State Archaeological Gallery, West Bengal, Calcutta : gold coin of Kaniṣka, A, obverse ; B, reverse ; C, brass bell. *See p. 77*

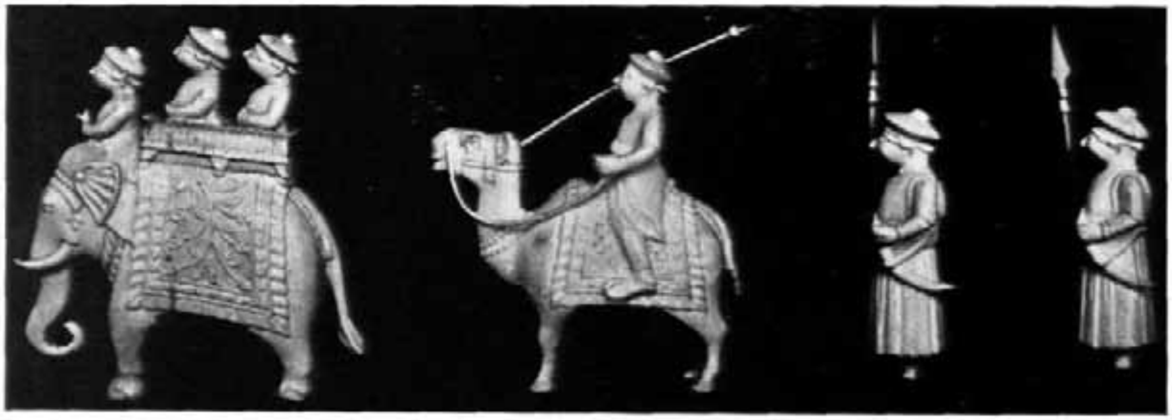


A



B

State Archaeological Gallery, West Bengal, Calcutta : A, Kalighat painting; B, portrait of a lady from Hazarduari. *See p. 77*



A



B

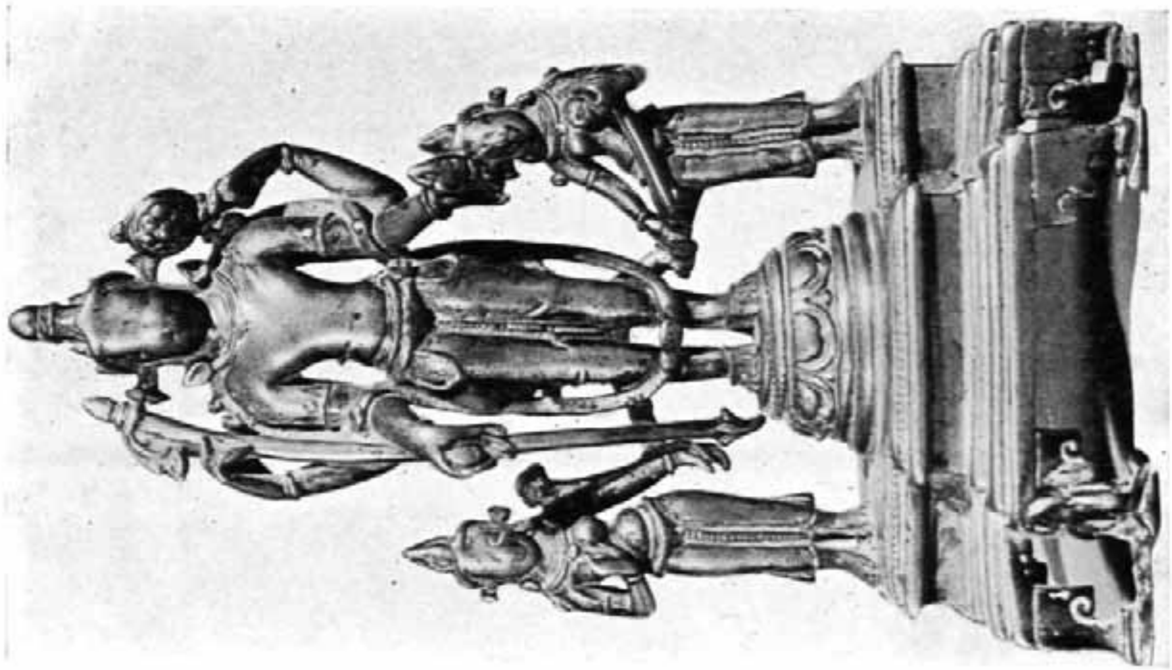


C

State Archaeological Gallery, West Bengal, Calcutta : A-C, *a set of ivory chessmen.*
See p. 77



National Museum, New Delhi : Copper Hoard implements. *See p. 81*

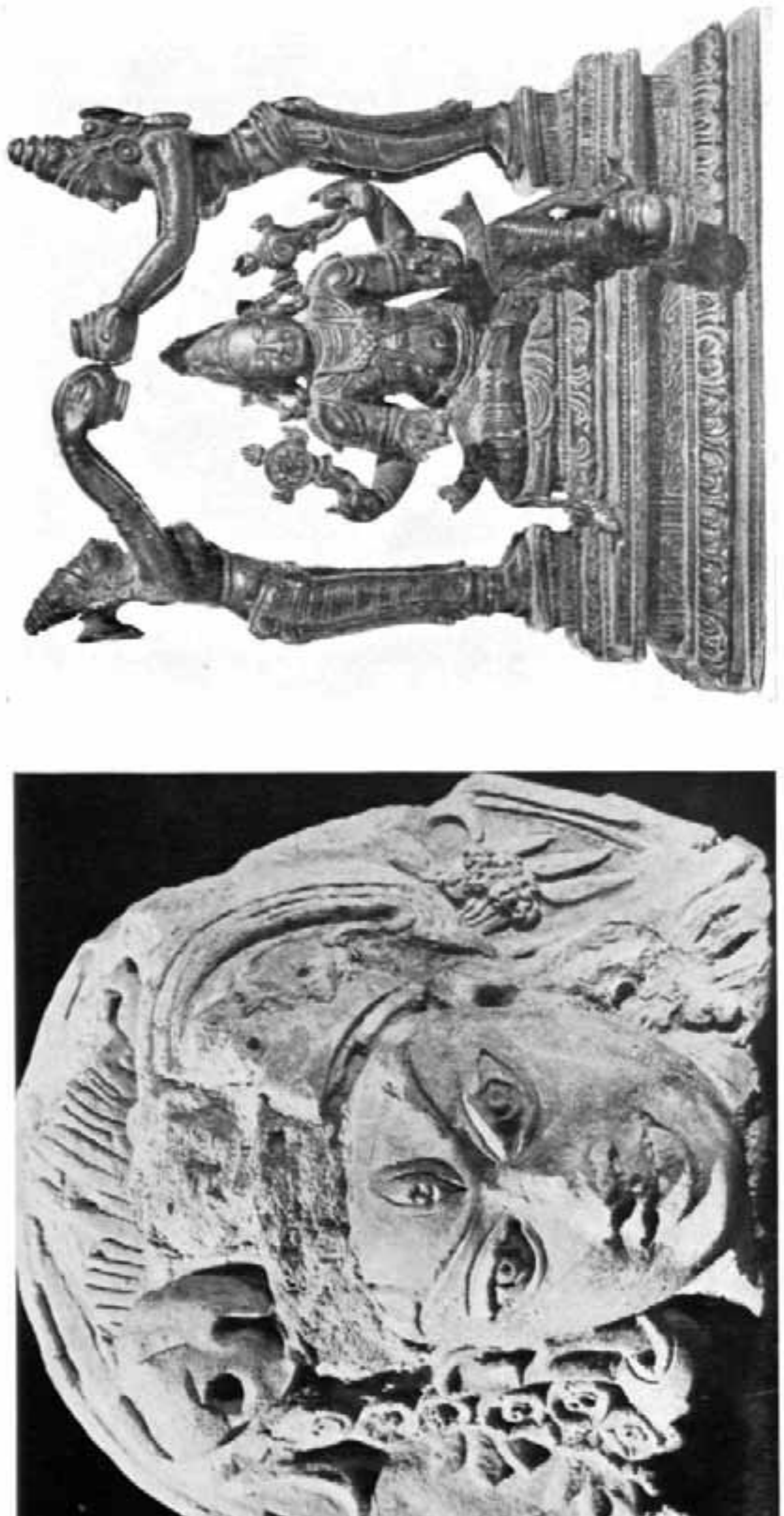


B



A

National Museum, New Delhi : A, *Buddha, from Phophnar, Vakataka period;* B, *Vishnu with consorts, Pratihara period.* *See p. 81*

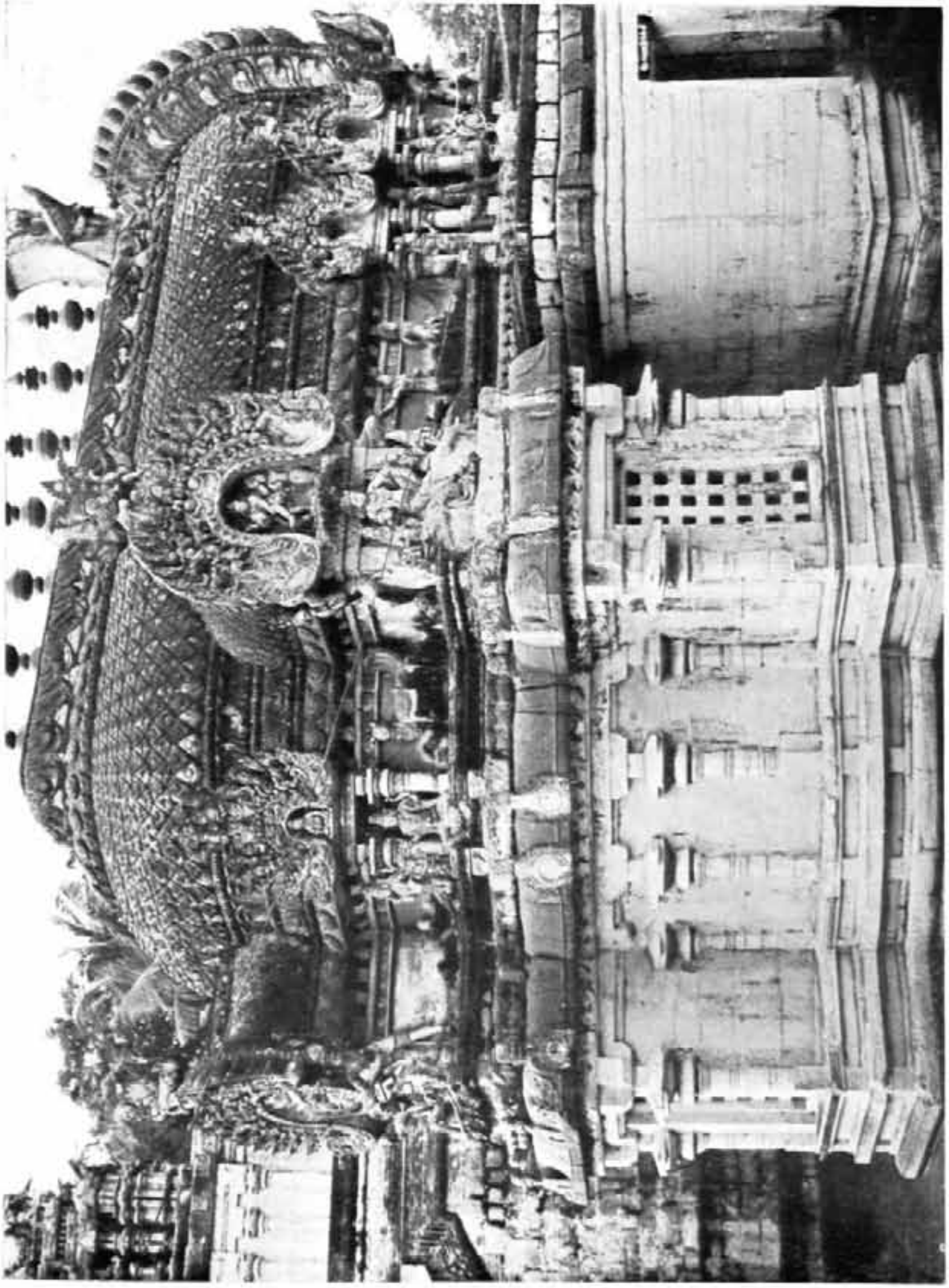


A B

National Museum, New Delhi : A, *Ardhanarisvara*; B, *abhisheka of Vishnu*. *See p. 81*



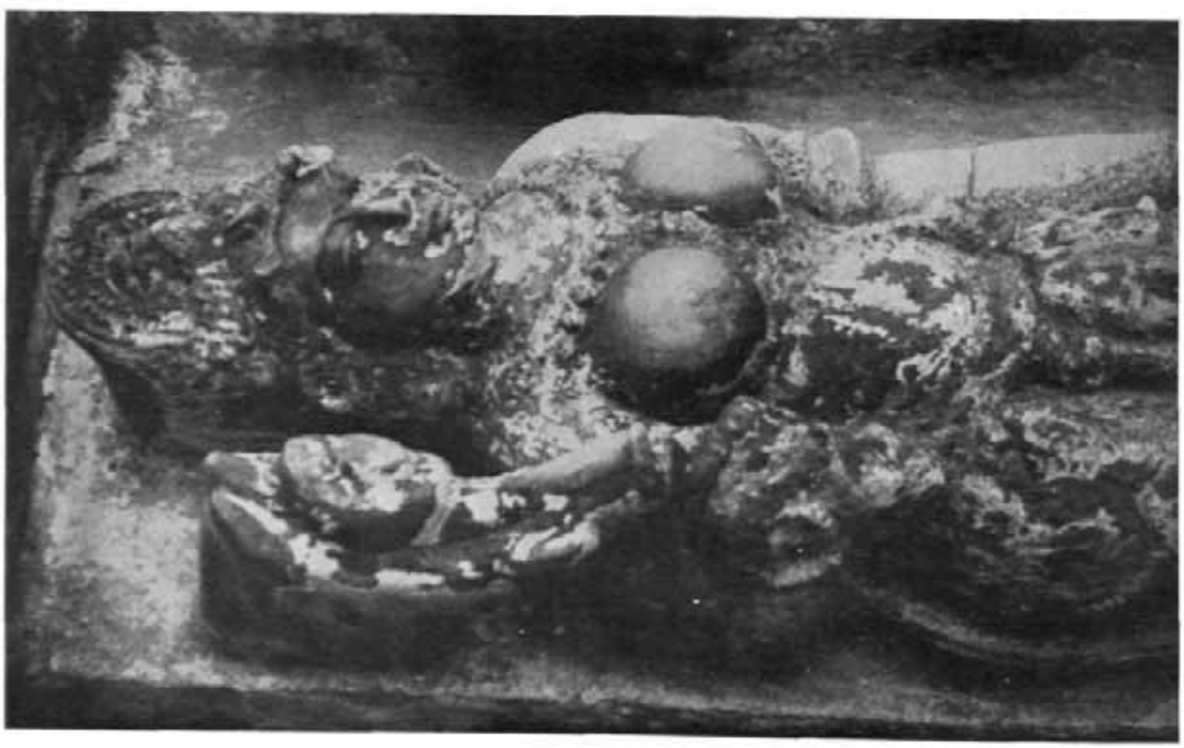
Kilattanaiyam : Uttamadanisvaram temple. *See p. 85*



Pennagadam : Pralayakalesvara temple. *See p. 85*



B



A

Khajuraho : Lakshmana temple, sculptures, A, *before, and* B, *after chemical treatment.* *See p. 102*





A B

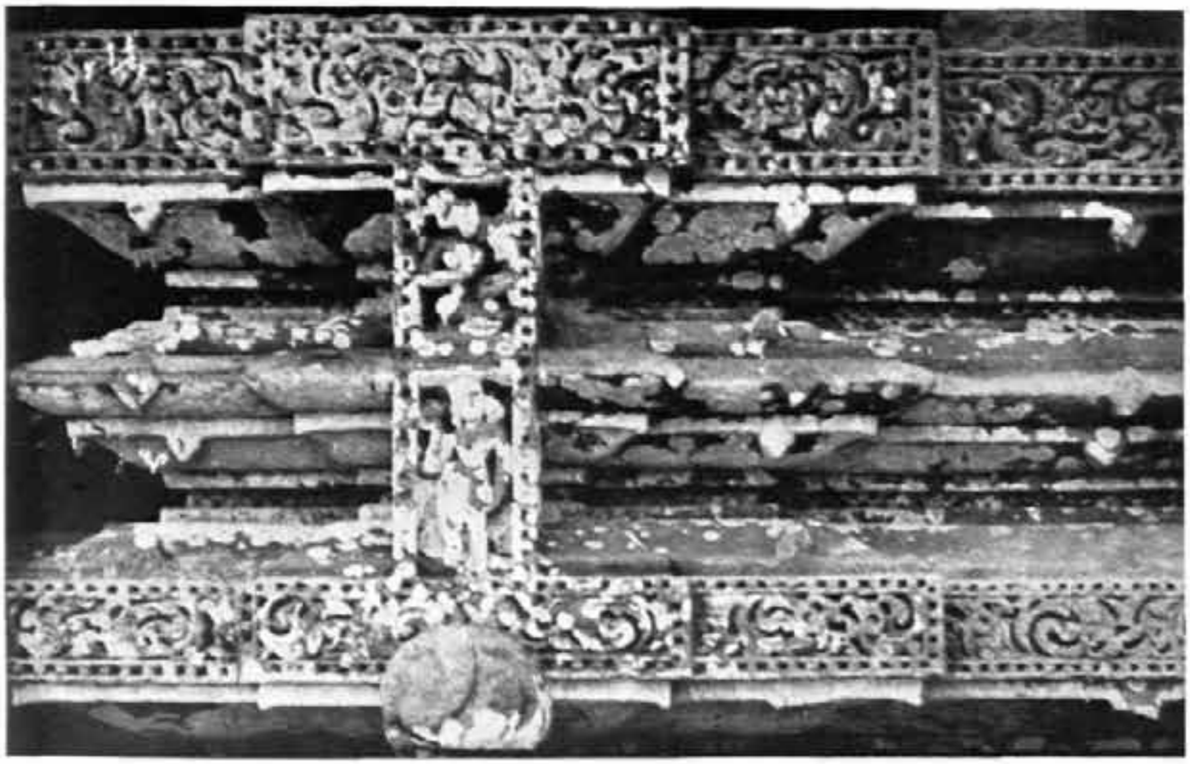
Khajuraho : Lakshmana temple, sculptures, A, *before, and* B, *after chemical treatment.* *See p.* 102



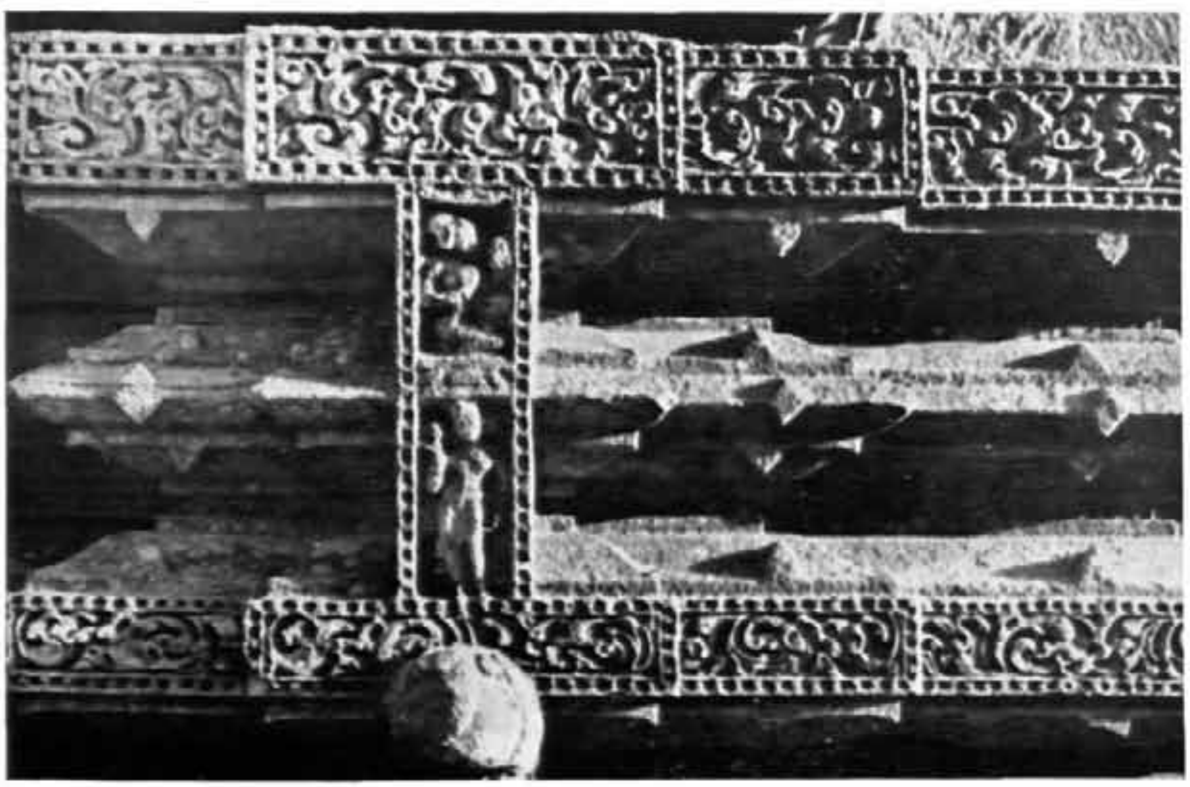


A B

Bhubaneswar : Brahmesvara temple, sculptures, A, before, and B, after chemical preservation. *See p. 103*



A



B

Bhubaneswar : Brahmeswara temple, sculptures, A, before, and B, after chemical preservation. See p. 103



Jhansi : Rani Mahal, wall-painting during chemical preservation. *See p. 105*